



62531/8

MEDICAL SOCIETY  
OF LONDON



ACCESSION NUMBER

PRESS MARK

GRIFFIN, W. & D.









OBSERVATIONS  
ON  
FUNCTIONAL AFFECTIONS  
OF THE  
**SPINAL CORD**



AND  
GANGLIONIC SYSTEM OF NERVES,

IN WHICH  
THEIR IDENTITY WITH SYMPATHETIC, NERVOUS, AND IMITATIVE DISEASES  
IS ILLUSTRATED.

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AND

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"I wish explicitly to state as my opinion, that many diseases, supposed to arise from local causes acting directly on the organs affected, do often proceed from disordered states, or preternatural excitement of some portion of the spinal cord. Even inflammation of these organs may be thus produced."—BURN'S PRINCIPLES OF MIDWIFERY.

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LONDON:  
BURGESS AND HILL, 55, GREAT WINDMILL STREET.

1834.

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# SPINAL CORD

ANATOMY OF THE SPINAL CORD

BY

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THE UNIVERSITY OF CAMBRIDGE  
PRINTED BY THE UNIVERSITY PRESS  
AT THE UNIVERSITY PRESS, CAMBRIDGE

LONDON

HURDIS AND HILL, 22, WINDHAM STREET

CHARLES WOOD AND SON, PRINTERS,  
Poppin's Court, Fleet Street.

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## PREFACE.

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IN endeavouring to explain the dependence of hysteric, nervous, and sympathetic disorders in general, on some disturbed state of the spinal cord or ganglionic nerves, we have much pleasure in feeling that we are in some measure offering additional illustrations of a great truth, which the late Mr. Abernethy, in his admirable work "On the Constitutional Origin and Treatment of Local Diseases," placed so fully before the public. He has there pointed out the existence of a wide range of functional affections, simulations of the organic diseases of the system, which owed their origin altogether to what he called constitutional or nervous irritation, or what he would perhaps have called, had he written at a later period of his life, irritation of the brain or spinal cord. In fact, the experiments of the French physiologists were no sooner made known to the world, than Mr. Abernethy at once saw the important inferences they were certain to lead to in pathology, as appears from a note to the chapter on nervous and muscular disorders, in the last edition of his works. "No considerable progress," he says, "could be expected to be made in the study of the origin of sympathetic diseases, whilst the brain was regarded as the sole source or centre of nervous energy. Now that the experiments of M. le Gallois have extended our knowledge of the nervous system, and shown that the different portions of the medulla spinalis form also centres from which the nervous actions of corresponding parts of the body proceed, and to which they tend,



considerable knowledge is likely to result from attentive observation and accurate dissections. It is in my opinion sufficiently evident, that disorders of the digestive organs sometimes affect the different portions of the medulla spinalis, and produce sympathetic disorders of the body and limbs, without operating through the medium of the brain, as was formerly supposed." Had he gone but one step further than this, and asserted, that not only disorder of the digestive organs, but of the brain, lungs, or uterus, was capable of affecting the spinal cord in a similar manner, he would have anticipated in a few words all that we could offer on the subject.

The sensitive portion of the spinal cord and medulla oblongata seems obviously the medium by which derangement of the digestive or other organs act in exciting constitutional irritation, that is, act on the mind, on the vascular or secreting systems, or on the motor functions of distant parts; and again it is the medium by which distant local irritation, or the passions or affections of the mind, influence the digestive organs. To this reciprocal action and reaction Mr. Abernethy's doctrine is continually directed. For the most part, however, he overlooked the circumstance, that the spinal marrow is not always a mere inert nervous conductor between the source of disturbance and the distant affections indicative of constitutional irritation, but is itself the part absolutely and immediately thrown into a morbid state, of which these affections are but the symptoms; thus, when in disordered states of uterus or stomach, females of hysterical habits complain of pain of chest, cough, oppression, palpitation, and debility, these are not always to be looked upon as sympathetic complaints, occasioned we know not how by the uterine or gastric disturbance, but as signs of a morbid state of some portion of the spinal cord; of a secondary disease, in short, induced by the disturbance. It is the more necessary to hold this in view, as the morbid state or irritation of which we speak may sometimes occur



apparently as a primary affection, or may remain as the sole disorder, when that which originated it has been long removed.

In this age of investigation, when it is expected that all information should be conveyed in clear and perspicuous terms, perhaps the use of the word irritation may be considered very questionable. It has been commented on by medical writers as obscure, conveying no precise idea of any diseased state—a relic of the old love of mystifying, retained merely for the purpose of concealing our ignorance: but surely, as long as it serves to make us acquainted with a peculiar class of complaints, however ignorant we may be of their pathology, it answers all the purposes for which it is intended. Neither can we comprehend how matters would be mended or the medical art advantaged by considering these complaints as modifications of inflammation, or attaching characters to them wholly unwarranted by any researches which have been made in their morbid anatomy. We are nevertheless ready to confess, that the term irritation is one which, in an obscure science, we are constrained to use. We mean simply to express by it any stimulus acting on the whole or parts of the system, through the sensorium, without primary vascular excitement; and it would appear very probable, even in those diseases apparently originating in vascular excitement, as in inflammations, that the increased action of the vessels is not the first step in the process, but that a certain action or impression, as in the diseases of simple irritation, previously takes place in the sensorium. It does not seem easy to imagine that the actions of any vital part can take place independently of the centre and source of all vital phenomena, any more than sensation or motion could; and it might be a question, if the communication by ganglionic nerves to an injured part could be cut off as perfectly as by the spinal, whether local inflammation could take place at all?

Whatever the nature of nervous irritation may be, we believe its existence is unavoidably admitted by the profession\*, and, though so little comprehensible, a knowledge of its character and action is of vast practical importance in medicine, forming the great distinctive marks between the most opposite classes of disease. We can observe all its possible effects, though we cannot detect the mode, and note the anomalous discrepancy by which to distinguish its symptoms from signs of diseased structure, when we cannot offer any diagnostic of which we could give the rationale. "Ought it not to be a question," inquires Sir C. Bell, "what nervous affections are consequent on trivial irritation?" Perhaps there is not another connected with medical science, of such real importance, that has been so much the subject of loose and doubtful opinion. Facts, familiar to every one, go far to show what we hope subsequent cases may more fully establish, that there is no manner in which the functions of the senses, sensation, motion, circulation, secretion, may be excited, diminished, or extinguished by organic disease, that they may not be also, even more suddenly, by nervous irritation. The heat of the sun on the bare head, the abstraction of blood, the motion of a

\* Mr. John Bell's opinion, that all nervous disorders depend on the circulation of blood in the brain, was founded on the idea that, as the brain was insensible, there could be no such thing as nervous irritation. But he was not then aware that impressions might be received, and distinct actions or sympathies excited, through the medium, not of the brain, but of distinct portions of the spinal cord, now the acknowledged source of all sensation and all motion; and that in this way the functions of the brain, as well as of every other organ in the body, might be either interrupted or rendered more energetic, without its being the seat or medium of the irritation. The fact stated by Desmoulin and Magendie, in their late work on the Vertebrata, that feeling and thought are not only distinct and independent faculties, but are distant from one another in their seats, seems likely to lead to some very interesting speculations on this subject.

worm in the stomach\*, will excite convulsions as effectively as inflammation or altered structure of the brain or spine. The sight of a disgusting insect induces vomiting as certainly as carcinoma of the stomach; the lancing of a whitlow, syncope, as truly as ossification of the coronary arteries of the heart. There is, in short, no affection of sense or motion so painful or paralyzing, that mere irritation may not occasion; and it becomes a doubt only how trivial a degree may produce the worst of these effects, or whether the morbid action bears any regular proportion to the intensity of irritation.

Though the relations of many parts of the system are still so mysterious, and the sympathies so complicate and extraordinary as to defy all explanation by nervous communication, much may in this way be understood, especially of the spinal cord and its connections. Its physiology has been so very much elucidated by late experiments, that a little consideration would suggest to us the complaints likely to be produced by affections of any individual portion of it. From its continuity with the brain (that part to which intellectual actions have been assigned), and their known reciprocal sympathies, we should expect its diseases would excite many symptomatic disorders of that organ, as pain, vertigo, delirium, &c., which we shall find not uncommon. As the origin of all sensation and motion, we might anticipate simply painful, or spasmodic, or paralytic affections in any part of the body, or that general loss of feeling and motion in which we sometimes see persons lie, inanimate and powerless; the body still, the eyes fixed, the functions of respiration carried on imperceptibly, yet fully sensible of all that is going on around them. As it includes the origin of the fifth pair, which is found to be essentially necessary to every organ of sense, except sight, in the exer-

\* I think it worth while inquiring, whether if the motion of a worm in the stomach produces temporary blindness or convulsions, there be not some nervous irritation?—*Abernethy on Local Diseases.*



cise of its functions, and even to sight to be accessory, irritation or disease near the trunks of that nerve should induce disturbance of the functions of the senses, or temporary paralysis of all or any of them; or painful affections of the extremities of these nerves themselves, as in the orbital, or facial, or alveolar branches. As the seat of the respiratory functions, we should be inclined to attribute to its disorder many complaints of the respiratory system. Near to the origin of the fifth are the roots of the respiratory nerves, the glosso-pharyngeal, the eighth pair, the spinal accessory, the phrenic; derangement or irritation of which should occasion affections of the throat, respiratory muscles, lungs, diaphragm, and stomach; loss or change of voice, hoarseness; crowing, croupy, or wheezing respiration; barking cough, globus hystericus, spasms of the chest or stomach, difficult deglutition, hiccough, weeping, crying, laughing, &c. Irritation at the root of the cervical nerves might induce, by communication, any of the foregoing symptoms, or occasion pain, stiffness, rigidity, or spasm of the muscles of the neck or arm, or numbness or paralysis. To irritation at the origin of the dorsal nerves we might attribute oppression, palpitation, pain in the anterior of the chest or stomach, or sides; and, at the origin of the lumbar nerves, abdominal tenderness, colic, constipation, pains in the loins, hips, extremities, with disorder or paralysis of the bladder, or of the lower limbs.

Lastly, the whole of the medulla spinalis, including the origin of the eighth pair, goes to form the ganglionic system of nerves. These supply all the muscles of involuntary motion, and all the viscera; and we have reason to suppose are mainly concerned in the secreting processes, among which Dr. Wilson Philip places the disengagement of caloric. They are distributed in networks round the arteries, perhaps solely supplying them with nervous power, and rendering them like the heart, though independent of, yet liable to be influenced by, any considerable portion of

the brain or spinal marrow. In irritations of the whole or a great portion of it, therefore, we should anticipate irregular action of the heart, evinced in palpitations or in approaches to a suspension of all action, and syncope; interruption of the secretions, evinced in the oppressed breathing, failure of appetite, and flushings or burning heats, or universal shiverings, or coldness of the extremities or of particular members; and irregularities of the circulation, evinced in local, and often violent, determinations, or in loss of tone and vascular debility. How accurately these conjectures are borne out by subsequent cases, the reader will have an opportunity of considering. And here it may be proper to offer some apology for encumbering our observations with what perhaps may be considered a very unnecessary number of them. This has been done principally that we might present a body of facts to the practitioner, which, in whatever light our opinions were held, would be of considerable use to him in pursuing the inquiry. These we have at the close separated from the observations; and it will not be too much to say, that if they do not support our views, they are certainly such as cannot allow the subject to rest where it has been. Indeed we should like much to hear an explanation of the nature of the complaint which we shall first offer in this work, or those given in the section on general irritation of the spine, from those who are still sceptical about their dependence. We should like to learn why pressure on a particular vertebra increases or excites the disease about which we are consulted? Why it at one time excites headach, or croup, or sickness of stomach; at another cough, or oppression, or constriction of chest; at another spasm of stomach, colic, or dysury; and, finally, at another fits of shivering, or syncope, or insensibility? Why in some instances any of these complaints may be called up at will by touching a corresponding point of the spinal chain? Why that point should be always sore to the touch in such attacks, and like a part diseased,

when it is not so in complaints of the same organs of a more acute character? And, lastly, why the diseases with which this spinal tenderness is apparently connected should be so often relieved by its cure, when remedies applied more directly to the parts complained of are unavailing?

It will appear, in the course of these observations, how very probable it is, that the investigation of spinal affections may furnish us with new means of forming a correct diagnosis in diseases in which it has heretofore been difficult or impossible. Spinal tenderness, which is almost an invariable attendant on the diseases of irritation, we shall find rarely accompanies acute inflammations; and though it may not be absolutely said that its presence is a proof of the non-inflammatory nature of a case, because acute inflammations may occur in constitutions already suffering with spinal tenderness, it is always sufficient to throw a doubt on those characters to which we have hitherto unhesitatingly trusted.

It is much to be lamented, that, in discovering or becoming better acquainted with the nature of a class of diseases formerly confounded with others to which they were little allied, our power of curing or relieving them is not always proportionally increased. In many cases, without doubt, it is only necessary to have true pathological views, to arrive at correct and efficient treatment; but, in others, we may very clearly trace the dependence and even nature of the disease, without making an approach towards the proper remedial measures. It will be found, too, that empirical practice very often anticipates that arising from pathological inference, and is hence frequently brought forward in proof of the correctness of the latter. Bleeding was known to be useful in inflammation, and issues in disease of the hip-joint, before the nature of either the one or the other was understood; and it is a question with respect to this latter affection, whether all the labours of Pott, Ford, or Brodie, or the mass of real information we now



possess of the nature of the complaint, and the structures affected, have advanced us one efficient point in the treatment, beyond what was known in the days of Hippocrates. In nervous diseases, which are so exceedingly common, these observations particularly apply. The obscurity of their nature has not restrained the industry of the human mind from searching out remedies; and whatever discoveries in their pathology may now or hereafter be made, they will in a great measure only serve to confirm plans of treatment already in use among practical men. It is not, however, to be hence inferred, that the labours of the scientific inquirer are without their value: they serve, as we have said, to improve our diagnosis; and if they do not always suggest new plans of cure, they at least confirm us in some, which, though long proposed, have been continually the subject of doubt and controversy. Nor are they indeed useless, even in those instances where their immediate practical advantage is not so obvious—we mean in diseases which are equally beyond the control of the pathologist and the empiric. In these they at least clear away much of the rubbish of conjecture, and lay out the ground on which, as our experience and information increase, a firm and indisputable treatment may at last be founded.

It is perhaps not the least advantage which is likely to accrue from the inquiry into spinal diseases, that it will impress us with the necessity of examining more attentively the real dependence and value of symptoms. How ready are we, for instance, when the stomach is attacked with pain, vomiting, and tenderness on pressure, to conclude that there exists an acute or sub-acute inflammatory state of some portion of that organ, when, on a moment's reflection, we must admit that all these symptoms depend solely on the nerves, and may exist with or without inflammation; that, independent of the nerves, the stomach could neither have pain, tenderness, nor vomiting; and that such symptoms might even apparently exist where there was no stomach at

all. In the experiment, for instance, in which Magendie substituted the bladder of a pig for the stomach in a living dog, vomiting was excited. There was no doubt nausea, and it is probable pain, referred to the usual situation of the stomach; the sensations at the cut extremities of the nerves being still referred by the animal to their former termination.

The Broussaian doctrines, so popular throughout Europe, could never have reached their present degree of extravagance, if there had been a due consideration given to this subject, or if the frequency of gastralgia and its perfect imitation of gastritis had been fully understood.

We may take this opportunity of observing, that these doctrines, which refer almost all affections of the stomach to acute or chronic inflammation, chiefly of the mucous membrane, seem to have originated from perceiving the frequent complication of gastric pain or tenderness with other diseases, and from the still more frequent discovery of inflammatory appearances in post-mortem investigations. But if gastric tenderness, pain, and sickness, are such common effects of spinal irritation, as to become almost necessary symptoms in disturbed states of the nervous system; and if they may exist, not only without the other usual characteristics of inflammation, but are relievable by remedies which should increase the inflammatory state, there can be little reason for the inferences deduced from their presence by the Broussaists. Morbid appearances on dissection may perhaps appear to furnish less fallacious or disputable evidence; but we cannot help thinking, that, however useful and necessary pathological anatomy may be to the progress of medical knowledge, too much importance, and too much certainty, have been attached to its inductions. The study of morbid anatomy, when absolute facts alone are made the foundation of an opinion or a system, must eventually contribute to make the medical art in some sort an inductive science; but if observations are to include

theories, and what are called facts are but hypothetical assumptions, we know of no more dangerous subjects upon which to venture even a conjecture. As to the morbid appearances in the stomach, for instance, every tint of colour that has ever been found has been set down to the account of inflammation. The slight crimson or florid blush, the dark-red, the deep-violet or brown, the purple, the slate-coloured grey, greenish-grey, and the dead-white, are all equally considered as its results; and yet these are not to be discovered in some cases that present all the characters of true inflammation, and are met with in others where no such disease could have existed. In Dr. Yelloly's excellent Essay on Vascular Appearances in the Stomach\*, dissections are given, in which they have been found to an intense degree in healthy criminals, executed in the prime of life, and in patients who had died with diseases of the brain, lungs, liver, or other parts, uncomplicated with any affections of stomach. Thinning of its coats, which John Hunter referred to the continuance of the digestive powers after death, and Broussais attributes to inflammation, Dr. Yelloly goes far to show is a natural inequality, observable in all stomachs. Even the effusion of coagulable lymph, which Dr. Armstrong considers to be the most unequivocal evidence of inflammation, is with difficulty distinguishable from thickened mucus; and a coagulated portion of extravasated blood, adhering to the villous coat, may be mistaken for a coloured coagulum. All these facts would lead one to be very sceptical as to any doctrine of inflammation of stomach founded on its morbid anatomy. It is very truly observed by Dr. Yelloly, "that, in judging of the existence of external inflammation in the living body, it is not by mere redness or turgescence of vessels that the opinion is guided; but by those circumstances, in conjunction principally with pain, heat, and swelling. It does not, therefore, appear to be less

\* Medico-Chirurgical Transactions, vol. iv, p. 371.



necessary, for the purpose of enabling us to judge of the existence of internal inflammation, that something unequivocal in the symptoms should be superadded to the appearances submitted to our consideration, than that there should be assistance required in judging of external affections, in addition to mere colour or vascularity."

It may be said perhaps, in favour of the Broussaian notions, that there is no reason to imagine gastritis could be so rare a disease as was formerly supposed, since the coats of the stomach must be as liable to inflammation as similar tissues elsewhere. It must indeed be admitted, as a law in the animal constitution, that similar textures, in whatever part of the frame, are subject to similar affections. Thus we find the mucous membranes, wherever situated, more liable than other tissues to inflammation terminating in purulent discharges, as the tunica conjunctiva in Egyptian ophthalmia, the urethra in gonorrhœa, the lining of the bladder in catarrhus vesicæ, and the bronchial membrane in bronchitis. The serous membranes, on the other hand, seem to be more readily attacked by inflammation of a rheumatic character, and other textures by acute, subacute, or chronic inflammation, whether of a common or specific nature. This general law, nevertheless, has its modifications and exceptions. Though similar structures be liable to similar diseases, there is the greatest possible difference as to susceptibility among them, which seems to have reference entirely to situation and function. For this reason it is that we have catarrh from cold so frequently, rather than purulent ophthalmia or gonorrhœa; that we have the serous membranes of the joints more frequently the seat of rheumatism, than those enveloping the heart or lungs. Nay, it would appear as if, in particular instances, the circumstances of situation and function altogether excluded tissues in one part of the frame from attacks to which they are obnoxious in every other. We know of no disease, as affecting the mucous membrane of the stomach, analogous to acute or chronic bronchitis.

In fact, that an organ like this, whose function it is to receive and digest such an endless variety of material, and upon the proper performance of which all other functions depend, should be so constructed as to resist the ordinary sources of disorder incident to structures like itself, would appear to be a necessary provision of nature. If its lining were liable, like the mucous membrane of the eye, to be thrown into a state of turgescence and inflammation by the contact of a mote or a grain of sand, we should not have an hour of health or quiet in our lives. As light was necessary to vision, nature has taken care to adapt the tolerance of the organ to its greatest extremes; and in like manner we must suppose she bestowed on the stomach a power of deriving nutriment from an incalculable variety of food, and a capability of enduring great extremes of hunger and repletion: hence it is, indeed, that we find all the abuse it hourly sustains from the appetite of the epicure or the drunkard, so seldom wholly destroys its natural action, or excites organic disease.

If, then, gastric pain and tenderness are much oftener indicative of disturbance of the nervous functions than of inflammatory disease; if there is no certainty in the inferences drawn from the morbid anatomy of the organ; if we cannot tell, from symptoms in the living body, what appearances may be found in the dead, nor from appearances in the dead the manifestations of disease which had occurred in the living; and, finally, if we know that great susceptibility to inflammatory action in any organ, from the exercise of its ordinary functions, is contrary to the usual providence of nature, we may fairly conclude that the doctrine of gastro-enteritis is theoretic and extravagant, and that the disease is any thing but what it assumes to be, the most frequent of all the phlegmasiæ.

It would be out of place here to enter into any lengthened discussion on the general merits or demerits of the Broussaisian system, which, from the great imperfection of our

knowledge, the speciousness of its doctrines, and the talent and dogmatism with which they have been supported, has won disciples in every country, and within a few years spread itself over the face of the European continent. It seems to be the fate of the human mind, when searching its way through obscure and perhaps inscrutable subjects, to be in every age led astray by some ingenious theory. The science of medicine has, in too many instances, to deplore the efforts of genius for its improvement; and we fear it will be hereafter found in none so much as in those attempts at localizing all diseases in the coats of the stomach and bowels, and reducing all treatment to bleeding and starvation. Le Sage could have little conception, when he satirized the simplifying spirit of the profession in the practice of Sangrado, that his caricature was to be outdone in the leeching and "*diète absolue*" of Broussais.

It only remains for us to say, that we do not pretend all the cases assumed as spinal, in the following pages, are absolutely such. Many of them may perhaps, with equal reason, be attributed to ganglionic or cerebral irritation. With respect to the former, there is yet much uncertainty; and we can only refer to the section on Affections of the Ganglionic System for what may be considered as the amount of our absolute knowledge on the subject. As to cerebral irritation, although the functions of the brain and cord seem to be so intimately connected, that it may be deemed almost impossible ever fully to discriminate their affections, practical observation has already contributed something towards it; and physiology is daily contributing so much more, that we need scarcely despair of its eventual accomplishment.

The discoveries respecting the fifth pair of nerves and its influences, would lead to very interesting conjectures on this subject; and perhaps account for the fact, that diseases of the upper part of the cord often evince themselves



in disturbance of the sensorium. The fifth pair seem to be the sole nerves which furnish sensibility to the organs of the different senses, and to the anterior of the brain—the seat of intellectual operations. To the due performance of the functions of the organs of the senses—as seeing, hearing, smelling, &c., the action of the fifth pair appears to be essential in a way we cannot understand; perhaps it is equally essential to the integrity of the mental functions.

There is yet one consideration on the subject of the diseases of irritation, for which we would wish to claim the reader's attention. If any person were to be told, that after all the labours of the most celebrated men in determining the diagnosis of acute and organic diseases, there was yet a complaint neither generally serious in its character, nor involving the structures of parts, which could assume the seat and perfectly imitate the symptoms of any of them: and if on inquiring into its rationale, and endeavouring to connect its varied phenomena with some one morbid point or central source of disease, he was informed that there was none such known, that the phenomena the disorder presented could not be accounted for, but were buried among the inscrutable sympathies of the nervous functions, would he not at once exclaim that all medical science was but vague opinion, and our subtle refinements in diagnosis but specious and inexcusable impositions?

If, on the other hand, it is explained to him, that, as the symptoms of structural disease depend wholly on the manner in which the morbid changes induced interfere with the functions of the affected organs, any cause capable of disturbing those functions in a similar manner, may produce similar symptoms. If it is further shown that disorder or irritation affecting the origins of nerves, or their attachments to the brain or spinal cord, always disturb the functions of the organs to which such nerves are destined, just as absolute disease would; he sees at once, that all local affections must have their counterfeits or doubles in the disorders of

the central nervous masses; and that it is only necessary irritation, affecting the spinal cord or ganglions of the sympathetic, should shift a few inches up or down, or affect the anterior or posterior column, or the thoracic or splanchnic ganglions, to call up the most distant and different complaints.

To conclude a preface of very unusual length, we shall only say for ourselves, that if we were to write from the rising to the going down of the sun, we could not sufficiently express our sense of the importance of the study of this subject as it relates to the cases of mock inflammations; of the facility with which it has enabled us to detect them; and, finally, of the advantage it has frequently given us in practice, over men who were at least our equals in information, and immeasurably beyond us in experience.

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## ADVERTISEMENT.

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SEVERAL of the earlier Papers in the ensuing Work have been already before the Public, in the pages of the London Medical and Physical Journal, commencing in 1829. As other engagements prevented the possibility of our continuing the series with any regularity, we preferred suspending the publication of the remainder until the whole could be given in its present form.

W. & D. GRIFFIN.

Limerick, George Street,  
Sept. 10, 1834.





# FUNCTIONAL AFFECTIONS

OF THE

## SPINAL CORD.

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### CHAPTER I.

#### INTRODUCTORY OBSERVATIONS.

ALTHOUGH the attention of the medical profession has been, within these few years, so very much directed to affections of the spinal cord, it would seem, on inquiry, that little really new has been added to our previous acquisitions on the subject. Referring to many valuable opinions of German and French writers, fallen into undeserved neglect, and comparing them with inferences now almost obtruding themselves on general notice, we shall be apt to imagine there has been, in this country at least, an unaccountable carelessness of observation; or be led to very unsatisfactory reflections on the impenetrable obscurity in which all disorders of the nervous system would seem to be involved. Perhaps it is because of the little fruit gathered by long toil, that some are inclined to consider the labour misapplied; and while they are satisfied to treat, under the appellation of nervous or hysterical, whole trains of complaints which have little in common but that of their being ill understood, venture to censure the persevering efforts of those, who, if they have been as unsuccessful, have

at least the merit of not being so hopeless, in the inquiry. It is gratifying to observe that the rapid progress which modern physiology is making, daily exposes the futility of opinions which measure the value of application only by its ill success in particular instances, and offers new proof, that discoveries in obscure sciences depend almost as much on the expenditure of time and thought in their pursuit, as on the strength of the intellect which may make them.

But, exclusive of these considerations, and even of the temptation to new exertion in the late extraordinary discoveries elicited by the labours of Magendie, Le Gallois, Wilson Philip, and Charles Bell, the subject of spinal disease holds out a most imperative inducement, in the perplexed state of our diagnosis through a vast range of complaints, and in the acknowledged mistakes which we every day see made in the practice of well-informed members of the profession. We need only refer to the periodicals of the day, which teem with cases of, as they are called, strange, anomalous, proteiform maladies, the mocking birds of nosology, or imitators of every known disease, accompanied with cautions on the danger of confounding them with their prototypes: or to the admitted difficulty in the treatises on nervous and hysteric diseases by the most distinguished practitioners of the day, of offering any marked symptoms by which they could always be clearly distinguished\*. Indeed, the actual existence of these

\* Dr. Hamilton, in his Treatise on Diseases of Women and Children, says, "On some occasions hysterics put on the appearance of several disorders, such as melancholy, epilepsy, palsy, inflammation of the lungs or bowels, gravel, &c. It requires in these cases not only the *most unremitting attention*, but also the *utmost practical discernment*, to distinguish the true disease from that which it resembles.

"When the symptoms are not uniformly and regularly those which occur in the ordinary cases of the disease imitated; when there suddenly seems great danger, without those previous changes in the progress of the complaint which are usually met with; when there is either a natural state of the pulse with alarming symptoms, or a very frequent irregular pulse without any affection of the breathing or shrinking of the features, there is reason to suspect hysterics as the true disorder. *Cases from time to time occur where it is impossible to ascer-*

singular and apparently functional disorders, which assume the symptoms of all others, and continue unrelieved by the remedies applicable to any; which look like inflammations, and are rendered worse by blood-letting; or simulate intense spasmodic attacks, and bid defiance to opiates; and which yet, after resisting all possible treatment, eventually, and perhaps suddenly, disappear of themselves; would, in a merely therapeutic view, appear strange and deserving of inquiry.

In the classification of diseases, the great division into those of the vascular and nervous systems, the pyrexia and neuroses of Cullen, was at once obvious to the nosologist; and again, the distinction of nervous complaints, as they developed themselves in any one tissue or organ, or another, and invariably presented the same characters, seemed easy of attainment; but there came to be a great difficulty about that vast number of the latter which are so variable in their seat and appearance, and so untraceable in their origin, as apparently to preclude all proper arrangement. They were necessarily thrown together as a sort of anomalous class, like the Cryptogamia in botany, awaiting the result of future discovery for more appropriate distribution. But surely, if it had been considered that all nervous disorders must eventually resolve themselves into affections

*tain the real nature of the affection, till towards its termination. The fact, too, that in every acute disease of women which requires copious evacuations, or which debilitates the system, hysterics are apt to occur in the progress to recovery, adds much to the difficulty of judging precisely in any given case."*

Dr. Gregory, in his Practice of Physic, after mentioning the frequent resemblance and connection between hysteria and epilepsy, and the difficulty of distinguishing one from the other, says, "But it is not only from epilepsy that hysteria is difficultly distinguished. There is hardly a disease in the whole nosology of which it has not imitated the symptoms, and that with surprising accuracy. I have seen hysteria accompanied by constant vomiting; by a complete ischuria renalis; by the most obstinate colic; by all the symptoms of genuine asthma. Authors have described in like manner a hysterical jaundice, a hysterical mania, a hysterical diabetes. These circumstances require to be borne in mind with reference to prognosis."



of the three great centres of nervous influence, the cerebral, the spinal, and ganglionic masses, much of this perplexity might have been avoided. We have, it may be presumed, now made sufficient progress in the pathology and diagnosis of diseases of the brain to estimate with some accuracy the characters which indicate their origin, and may generally, even in those that most nearly resemble spinal or other affections, draw correct inferences from the history of the case and the intensity of particular symptoms. Of those of which there is much doubt, or which evidently do not belong to the brain, we can observe how far they correspond with the usual or known symptoms of spinal disorder, organic or functional; and, if there be some found bearing no analogy to either the one or the other, the deduction seems clear, that they depend on some disordered or diseased state of the ganglionic system. However hypothetical a division of this kind may appear in diseases of the nervous tissues, which are so delusive and difficult of arrangement, and after death present so few appearances to direct the reasonings of the pathologist; however frequently erroneous its application may prove, it must be true in principle, and, when once held in view, cannot but give more of method and object to our investigations, and greater rationality to our treatment.

The cerebral, the spinal, and ganglionic systems, are all, independently of one another, though perhaps unequally, subject to inflammation, to irritation, and the influence of sedative powers. The spinal cord itself, the experiments of Le Gallois have shown, is composed of portions independent of one another in their powers and functions, being centres from which the nervous actions of corresponding parts of the body emanate, and to which they tend. At least four of the senses derive their faculties from its superior portion\*, which can receive their usual impressions and originate actions independent of the brain or cerebellum. Its anterior part is the source of all voluntary motion, its

\* The spinal cord is always mentioned as including the medulla oblongata.

posterior of all common sensation. Between both is the column from which arises Mr. Bell's respiratory system of nerves, the most susceptible and independent of all; and yet we find a perpetual disposition to attribute all nervous diseases to affections of the brain, as if it were the sole sentient organ and seat of universal sympathy.

That a vast proportion of those diseases may be attributed to irritation at the origin of the spinal nerves, without any cerebral affection, was asserted by Ludwig. He even explained the phenomena of many hysterical affections by the connection of these nerves with the *par vagum*. Other eminent men have held the same opinions. Mr. Burns, of Glasgow, in his work on Midwifery, has given a very excellent and interesting chapter on spinal irritation, evidently the result of long experience and acute observation, in which he asserts that its visible consequences are so various it is impossible to classify them. In a late Number of the Glasgow Medical Journal, Dr. Brown has published an essay, pointing out the connection between it and many painful affections, usually treated as rheumatic, or disorders of the viscera. He has cited some valuable cases, and offered much ingenious reasoning on the causes to which they may in general be probably attributed. How very little these opinions have as yet influenced the science, any one acquainted with modern medical literature or medical practice must be aware.

It is surprising, when a subject is once universally admitted to be obscure and perplexing, with what little scrutiny or hesitation we receive any name or phrase that relieves us from the impression of total ignorance. To this alone can be attributed the ready acceptance of the words imitative, proteian, anomalous, &c., as applied to hysteric and nervous diseases, as if there existed in the animal economy some evil influence, without home, or habit, or relation, capable of increasing or interrupting any of its functions, or assuming any of its morbid actions, yet free and independent of all organic change. The convenience of referring to such influence all the morbid phenomena which are difficult of explanation, bears a just proportion to its

mysterious nature; but surely we might as well speak of labour imitating cramp, as of hysteria imitating croup; the one a spasmodic affection of the gastrocnemii muscles, occasioned by pressure or irritation of the sacral nerves, the other a spasmodic affection of the muscles of the larynx, occasioned by irritation of the cervical\*.

It is not to be inferred from these remarks, that any thing approaching certainty as to the nature of those numerous diseases can be yet attained. We only contend against that catching indolence which leads us to prefer vague modes of expression to active inquiry. Accurate observation and industrious research are never wholly useless, even when they fail in establishing the inductions sought for; and this conviction, perhaps as much as the hope of unravelling those intricate affections, gave us perseverance in investigations which were not without considerable trouble. Our object was chiefly to illustrate their apparent connection with a morbid state of the spine, and to point out the immense proportion they bear among the complaints of young females, beyond what has been generally imagined. Remarkable instances will be given of the inutility of all symptomatic treatment in some of them, and the successful, and sometimes almost magical, influence of the remedial means, when once directed to the spine. The successful cases were not, it must be admitted, of the most complicated class; but they were such as, when not understood, always prove sufficiently obstinate to weary the patient and embarrass the practitioner. Of the more perplexing ones, where general irritation of the spinal column prevailed, we have to regret that the practice of two dispensaries, at which 4,000 patients were annually attended, afforded a more ample opportunity of studying their history and character, than of discovering much that was new in their management.

\* If we were to inquire, in a case of labour, what is this spasmodic and painful affection of the gastrocnemii? and it was answered, It is not idiopathic cramp, but an affection exactly resembling it, dependent on the parturient state, one, in fact, of the many anomalous complaints which labour is found to imitate, would it be conceived in the slightest degree satisfactory?



If, however, to become acquainted with all the possible relations of a disease, and to approach nearer to its probable origin, be any advance towards an improved plan of cure, even what has been done may not be considered unimportant.

Perhaps the extraordinary case which first arrested the notice of the writers of these pages, and directed their attention especially to disorders of the nervous system, may also prove its most interesting introduction to the reader.

I. A young lady, aged twenty-one, who had always before enjoyed good health, received a slight blow on the chest from her mother, during her convulsive struggles while dying of apoplexy. She spit up a little blood at the time, and felt pain for some days: after this it suddenly removed to the abdomen; affecting the left side, about the situation of the descending colon, and was accompanied by frequent pulse, tenderness, and the most incessant vomiting. The pain was abated by bleeding, blistering, and aperients; but nothing could allay the vomiting, which was brought on by the smallest quantity of any thing, solid or liquid, taken into the stomach. This came to be attended with flitting pains in the head, with throbbing of the temples, and intolerance of light, attributed to the straining; the continuance of which made it difficult to move the bowels. Even when medicine did operate, it gave no relief.

She remained many days in this state, suffering much from want of rest and the distressing retching; after which she was attacked with frequent oppression, occurring at intervals through the day, and usually terminating in fits of insensibility. In these she usually lay for ten or fifteen minutes, with her hands fast clenched, or sometimes shutting and opening them alternately with great rapidity. There was considerable rigidity of the tendons of the wrist, while the fit lasted; and the first symptom of amendment was always a gradual relaxation and opening of the fingers, when she fetched a long deep sigh, and recovered.

These oppressions proved as intractable as the vomiting,

and were very distressing. Repeated blistering, ether, assafœtida, opium, and other antispasmodics, were had recourse to without relief, except of the most temporary kind. At the end of three weeks, however, the more severe symptoms of the complaint, without any very obvious cause, and after resisting every kind of treatment, began gradually to decline: the oppressions, throbbing at the temples, fits of insensibility and vomiting, manifestly abated; and the digestive organs, the state of which had never been lost sight of, improved rapidly under mild aperients and bitters. In short, she soon after recovered a sufficient degree of health to permit her going to a party, and even joining in the amusements.

This reprieve was but of very short continuance. A return of the oppression brought with it cough, pain in the chest and left side; the former slowly disappearing as the latter symptoms advanced and became more formidable. The cough was loud, dry, and convulsive, and became at last so incessant, that she had no intermission of the fits by day or by night. The convulsive expirations followed one another with such rapidity, that one could only conceive the suffering by imagining the fits of a severe chincough following one another without interval. To heighten the distress, it increased considerably the pain in the chest and sides, and the respiratory muscles became so sore and tender, from the eternal convulsive action, that she could scarcely bear to have a finger touch them. After much time had passed in vain attempts to remove or alleviate it, she became affected with swelling and pain in the anterior part of the right lobe of the liver, which increased rapidly, and formed a round, circumscribed, shining tumour, bearing all the appearance of an abscess. This was very painful, and the torture produced by the constant coughing was extreme.

A course of blue pill was now prescribed at a consultation; the symptoms, and especially the cough, being attributed to an affection of liver, which was supposed to have existed for a long time, although only now developing

itself. Copious ptyalism followed, and, to the great gratification of every one, the cough was now first relieved, and in a week or two ceased altogether.

The young lady, however, remained in a very weak, complaining state, troubled much with occasional pain in the head and intolerance of light, and eventually, as the soreness of the gums diminished, the terrific cough again evinced a disposition to return. It was not considered advisable to persevere in the mercurial pill, which seemed to be the only preventive likely to be employed with success, as she had suffered much from the salivation, and was greatly debilitated. The consequence was a renewal of her sufferings, if possible, to a more intense degree than before. New symptoms week after week supervened, or alternated with the old, and were only more distressing on account of their strangeness and suddenness of attack: at one time the oppressions; at another, headach with fits of insensibility; at a third, the old pains, traversing different parts of the colon and ileum with their former violence. She was attacked, too, with severe pain and tenderness in the hypogastric region, followed by retention of urine, obliging the introduction of the catheter. But little was drawn off, however, as the secretion was almost entirely suppressed, and did not return for three or four days, when the soreness and pain in the hypogastric region subsided. During all this time the pain and tenderness of chest, and the dry, loud cough, were never for a moment absent.

The case was now looked upon as quite hopeless: the distress occasioned by such complicated disorder destroyed all rest and appetite, and induced extreme emaciation; solid food could no longer be borne, but was either instantly rejected, or excited violent spasmodic pain in the stomach, and sometimes the oppressions. The slightest motion (she was now continually confined to bed), brought on similar paroxysms, after which she usually became almost insensible, with suppressed convulsive efforts at coughing, her voice gone, and her pulse rapid. This state generally lasted for some hours, sometimes much longer; and, as



strength gradually returned, the hacking eternal cough resumed its attack.

It would be tedious to enter into a minute history of the symptoms or treatment during the succeeding two or three years. The disease successively assumed the appearance of organic disease of the lungs, heart, and abdominal viscera, and, though the sufferings of the young lady may be supposed to have diminished little, she continued to live, and apparently to maintain the little strength the earlier attacks had left her. She lived almost entirely upon milk, and of this not more than half a pint was taken in the day. A small portion of ripe fruit, a strawberry or cherry, was taken occasionally in the summer-time, and sometimes a little jelly in the winter. Little medical treatment was made use of, except some attention on the part of her friends to her general health, and occasional attempts at relieving particular symptoms by opiates, antispasmodics, or blisters.

On an accidental visit of her medical attendant at the close of the year 1828, the connection between several of the pains of which she complained and the distribution of the spinal nerves appeared so striking, that an examination of the spine was made. There was no deformity, unevenness, or prominence of the vertebræ, but extreme tenderness of the whole column. Pressure on any of the spinous processes excited instant convulsive fits of coughing, and pain at the corresponding point anteriorly, or oppression. The slightest curvature in any direction was intensely painful; attempting to turn in the bed during the examination (which, however, she could never either accomplish or permit), occasioned a sensation as if her back was breaking; raising the head from the pillow, and bending the neck forward, brought on a burning pain at the middle dorsal vertebræ, which shot down to the extremity of the spine, and thence to the limbs, knees, and toes, followed by a sort of general cramp. It seemed extraordinary how little the patient directed attention to the back in so intense a case of spinal disease: she frequently complained of pain

there; but, as it was never constant like those felt at the extremities of the nerves, and was only excited by pressure or motion of the spine, and was then generally accompanied by, or occasioned, extreme sickness of stomach, retching, and eventual insensibility, it claimed little notice in the train of symptoms.

The complaint now clearly developed itself. The various affections to which she had been so long a sufferer were obviously attributable to some disease of the medullary column. The distressing headach, rushing of blood to the head, ringing in the ears, throbbing at the temples, and fits of insensibility; the sensation of acute pain, or of the pricking of pins and needles, shooting forward through the face and jaws, in the course of the branches of the fifth pair of nerves, or lower down in front of the larynx; the difficulty of swallowing; the shrill croupy breathing; the pain and cramp of the stomach or chest; the oppression, and the dry, loud, convulsive cough, were all readily referred to disease or irritation of the cervical portion of the spinal cord. The extreme soreness and pain of chest and sides; the pain at the upper part of the sternum, shooting down the arms to the fingers, and producing distressing tingling; the occasional numbness of the arms; the symptoms of cardiac and pulmonic disease, appeared to depend upon some affection of the upper dorsal and lower cervical: and the abdominal pain, tenderness, spasms, pseudo-inflammatory attacks, and those of dysury, or total suppression of urine, or painful affections of the limbs, were at once traced to some altered state of the lumbar and lower dorsal portion. All the complicated, and it would appear whimsical attacks of this strange malady seemed now simple and necessary results, and their alternations with one another merely indicated the shifting of the diseased action to new points of the vertebral chain.

As issues, or blisters to the spine, were almost the only untried remedies which the state of the patient suggested, and these seemed wholly inadmissible, from the difficulty and pain with which the slightest motion of the frame was attended; as it appeared also possible that sloughing or

gangrene might take place in so emaciated a person, the case was again left to the efforts of nature; care, however, being taken of the state of the bowels; and narcotics, &c. resorted to, as before, when in violent pain. The disease was, nevertheless, slowly progressive, and as it advanced declared its true seat to the most careless observer: the whose spinal column was, if possible, more acutely tender; the slightest pressure or motion brought on pain, cramps, or fits of retching; drawing the sheet or arranging the bed, or the sudden falling of a piece of furniture, excited an instant paroxysm, commencing with cramp in the chest; sense of suffocation in the throat, with low crowing inspiration, not ringing and stridulous as in croup; and terminating in extreme debility, with total loss of power, and tremulous convulsive motion of almost every muscle in the frame. The affection of head and pain in the throat became more tormenting; there was constant distressing pain of stomach, with rawness, soreness, and sometimes a burning feeling extending up the trachea to the larynx; there was variable pain of the chest and left side, and a sensation as of a sore cord or band stretched across from the superior bone of the sternum to a point corresponding with the anterior part of the fifth rib on the left side. This never permitted her stretching back (making the chest prominent), and she had often apprehensions that it would rend or snap in the violent fits of coughing. She had also a frequent feeling as if the spine was seized internally, and drawn to the sternum or stomach: when to the former, the sensation was succeeded by convulsive spasms, with oppression; when to the latter, by violent cramp extending upwards to the sternum, and shooting down to the limbs, knees, and toes. At times, when the cough was extremely violent, and shook the frame much, or when the patient was lifted on a sheet to have her bed arranged, she felt as if the articulating surfaces of the spinal bones were inflamed, sore, and glided or rubbed upon one another in the loose ligaments. This feeling was so excruciating, that, whenever she was about to be removed on a sheet, she was accustomed to throw all the extensor spinal muscles into action, and, by a violent effort, bring



the whole spine into a state of rigid extension, to preclude the possibility of the slightest motion. An approach to syncope always followed the exertion, in which she lay on the bed for days unable to speak or swallow or even move, yet conscious of every thing passing about her. Although so seemingly still and breathless that it might have been imagined she lay in an utter state of relaxation and exhaustion on these occasions, if a hand was laid on hers, it was found in rigid spastic action, and, instead of reposing quietly on the chest as it appeared, pressed firmly and almost convulsively against it, as one does to prevent the elevation of the ribs in painful breathing. The breathing, too, although so apparently easy as to be almost imperceptible, was found, on close observation, difficult and suffocating; there was a subdued working of the muscles of the throat, and inspiration was either wholly suspended at times, or occurred in short indistinguishable catches, until a deep sigh brought with it general relaxation and relief. It was usually a full week before she recovered from the ill effects of these attempts to move her from the bed; but even turning her head on the pillow for a few minutes brought on such convulsive coughing, and subsequent sinking, that she could not utter an audible whisper, and would lie for hours in a state of the most extreme exhaustion.

As it seemed that her sufferings could now, at all events, admit of little increase, an issue was inserted at each side of the second cervical vertebra; by which the pain of the forehead, face, and scalp was considerably relieved; all the parts, as she said herself, above the issue, were better; the other symptoms were little altered.

Towards the close of February 1829, while drinking in the evening, she felt a sensation as if something gave way in her chest, as if the band from the upper part of the sternum, before spoken of, had snapt. She was instantly attacked with oppression, a sense of burning and pain in the throat and chest, croupy breathing, total loss of speech, and blindness of the left eye, with numbness and paralysis of the left arm; she had also a sense of numbness extending from the point in the chest where she felt the band snap,

across to the shoulder, and down the left arm to the fingers; some difficulty of swallowing, and violent pain, straining, or retching, when the smallest quantity of food or drink reached the stomach. There was some swelling and excessive tenderness of stomach, with violent cramp at intervals, which extended down to the limbs and knees. The secretion of urine was suppressed, no more than half an ounce having passed in twenty-four hours, and that thick and black. There was no tenderness or fulness in the pubic region.

After the lapse of some days, during which croton oil and diuretics had been freely used, the eye partly recovered its power, and the action of the kidneys was restored. Blisters to the throat and neck were of little advantage; but, on applying one to the occiput, some degree of voice was manifestly recovered, and the power of swallowing perfectly; the fingers of the paralysed arm also seemed to acquire a little motion\*. In July, a very decided improvement had taken place. The arm had attained much strength; and she was able to speak in a low whisper, though with pain and difficulty. It should be observed, that the power of articulating was never lost, so that, even while partly dumb, she could often make herself understood by a distinct, voiceless articulation of the words.

We have at length brought the history of this melancholy complaint down to the present moment, and venture to express a hope we shall hereafter have to record its favourable termination. After all the young lady's sufferings, there is no evident sign of any irremediable mischief having occurred; and, however small the quantity of nutriment she is able to take, the expenditure of power has become so accurately proportioned to it, that we may suppose little need be apprehended from debility. In conclusion, perhaps, there is yet one circumstance worth mentioning: the

\* The paralytic attack seemed in the first instance to have affected the whole side; for, although she never complained of the left leg, it was observed, in those convulsive thrillings of the frame which succeeded paroxysms of the pain and oppression, to remain perfectly still. It continued, however, capable of the usual voluntary motions.

singular change which, in the course of the complaint, took place in those fits of insensibility, or powerlessness, which were said to approach a state of syncope. In the commencement they very closely resembled slight tetanic paroxysms, during which there was a degree of consciousness to all that was passing around her; they then succeeded the rushing of blood to the head, &c., and she lay staring with a wild glassy look on all about without power of speech or motion; but latterly they came on like cataleptic trances, fixing her suddenly in whatever position she chanced to lie, for ten or twenty minutes, or longer\*.

The case of Mrs. H., aged forty-five years, which occurred about the same time, was equally strange and interesting. She was seized with acute pain and great tenderness in the direction of the ascending branch of the colon, with costiveness, thirst, heat of skin, hard quick pulse, and the most incessant vomiting. In a few hours the tenderness became so great, she could scarcely bear the slightest touch, and the irritability of stomach so extreme, that even the smallest quantity of fluid was instantly rejected. Blood-letting, mild purgatives, and eventual blistering, gave considerable relief; but the sickness of stomach continued, with little or no intermission: saline draughts, opium, all the usual remedies, failed to allay it.

The remission which had taken place in the other symptoms lasted only for two or three days; at the termination of which they recurred in their original violence, but the

\* In a late visit to this lady, it was gratifying to observe her amendment. She now speaks perfectly well, is cheerful, and entertains hopes of recovery. She complains, however, that, instead of the tight sore band across the chest (the snapping of which, though attended by such extraordinary symptoms, gave her great relief), she now feels a sore tumour as if growing from the spine, and hitting against the sternum in front every time she coughs. Can these sensations really have a connection with any organic affections? Was the snapping of the band the rupture of an adhesion? and why the paralysis? These are interesting questions. She mentions that, for days before the presumed lesion took place, she felt the band giving more and more with the fits of coughing; she felt it tearing, and, after the complete rupture, to use her own expression, floating loose in the chest.

pain now occupied the situation of the transverse arch of the colon. There was much general fever, with flushing and costiveness as before, and relief was again obtained by a repetition of the bleeding, purging, and blistering. The attack, however, occurred a third time in the sigmoid flexure, and the same remedies were once more resorted to.

Though every accession of this complaint exhibited strong characters of acute inflammation, it did not, either in its disposition to resolve or to run its course to a fatal event, bear any resemblance to it. The same symptoms returned again and again, under a variety of treatment, but always attacking in succession new portions of the alimentary canal, at intervals of three or four days. The distressing vomiting continued throughout.

After several weeks had elapsed, without any material amendment, except that there was less general fever and hardness of pulse, and more of debility and emaciation, a consultation was held. There was found, on examination, some apparent hardness of liver, and it was thought slight enlargement; and, as the evacuations had always been scanty, and of a dark colour, intermixed sometimes with green leafy bile, the symptoms were supposed to depend on a deranged state of that organ. A mercurial course was, in consequence, agreed on: copious ptyalism was induced, and was followed by a slow but progressive amendment. The vomiting abated; the frequent pain gradually wore away; and, though the lady remained for a long time in an enfeebled and emaciated condition, and was for months subject to slight returns of the complaint, she eventually attained a tolerably good state of health.

The resemblance which the first of these singular cases bears to some of Dr. Monteith's, quoted in Dr. Abercrombie's work, must at once occur to the reader. It seems an exact counterpart in many of the symptoms: in the head-ach, palpitations, cataleptic fits, spasmodic affections of the abdomen, and in the incessant vomiting, and impairment of vision. As it will be hereafter shown that spinal tenderness almost invariably exists at the very commencement of these attacks, it seems inexplicable that no such symp-



tom should have existed in Dr. Monteith's cases. He states that no disease could be discovered on examination, or by pressure, though in some pain was increased by motion or attempting the sitting posture. It may possibly be, that the examination was not made with sufficient minuteness, as cases occur occasionally in which the tenderness is not at first apparent, and yet, on detecting it, it is found to be very acute. Though no examination was made in the early stage of the first complaint, of which the above history is given, and none at any period of the second, there is not the slightest doubt, from inferences fairly deduced in subsequent inquiries, that in both it might have been detected on the first day of attack, and the true nature of the disease at once ascertained.

The case of the younger lady was highly remarkable in its perfect imitation of almost every possible form of organic visceral disease, in the wonderful endurance of the system under such a continuance of deep and excruciating suffering, and in the apparent existing possibility of recovery after long years, during which every function of the constitution had been successively interrupted or disturbed, and every hour had been the harbinger of some new pain. Whether in a case so intense, if treatment had been earlier directed to the spine, the disease would have been simplified and rendered more tractable, is questionable; but it, at all events, furnishes ample proof of the fruitlessness of all modes of cure merely directed to symptoms.

The case of Mrs. H., though equally striking in its perfect semblance of inflammatory affections of different parts of the alimentary canal, was more limited in its sphere of diseased action, and less diversified in the nature of the attacks, only because fewer points of the spinal chain were implicated. Any one conversant in those complaints would infer that there existed acute tenderness of the upper cervical and upper lumbar, and perhaps of the two or three lower dorsal vertebræ\*.

\* Since the above was written this lady was again visited, in consequence of a violent spasmodic pain of the stomach, with which she was seized, followed by sickness, retching, and violent pain of back. She

It is an extremely fortunate circumstance, although one which could have been little anticipated, that the most trivial irritation of the minutest portion of the medullary column may, and almost always does, induce this corresponding tenderness. Indeed, it is a symptom so constantly present, and sometimes to so acute a degree, that it seems wonderful it should have been so long unobserved or undervalued. It appears to have completely escaped even so observant and refined a symptomatologist as Dr. Marshall Hall. The public owe much to Mr. Abernethy and Mr. Brodie, for having directed attention to some of those diseases of irritation, and for having distinguished them from the more serious affections of the bones. Such are the cases of hysterical pains in the spine, or hysterical tenderness, which the latter gentleman is said to make mention of in his Lectures, and those extraordinary nervous affections pointed out in his excellent work on Diseases of the Joints, as bearing a striking resemblance to ulceration of the cartilages. Mr. Abernethy, in his Essay on the Constitutional Origin of Local Diseases, has given several cases, which, it will be shown, were evidently those of simple irritation of the spine; but although, with his usual discrimination, he has distinguished them from the more formidable disease of the vertebræ, he seems not to have attached sufficient importance to the tenderness on pressure. He appears to have regarded it rather as one of the many anomalous symptoms connected with nervous irritation, and dependent on disorder of the digestive organs, than as pointing out the immediate source of the most distressing and greater number of them.

This symptom is, in fact, usually altogether overlooked in general practice. The patient unfortunately seldom com-

was relieved by hot fomentations to the spine, and aperients. She describes herself as subject to these spasmodic attacks ever since her long illness, that they always attack the stomach or abdomen first, and then, as she expresses it, "fly to the back," and fix there with increased violence. As there was now an opportunity of ascertaining the truth of former conjectures, it was not neglected. An examination of the spine was made; and there was extreme tenderness of all the lumbar vertebræ, with a slight degree at the seventh dorsal: she feels the pain in this last situation acutely when under the influence of the attack.

plains of the back, and most frequently does not know that it is in the slightest degree affected. Hence, when the complaints are such as do not very obviously lead to an examination of the spine, the cough, pain of chest, oppressions, palpitations, the intense headachs, the spasmodic or apparently inflammatory affections of the abdomen, which fill the sufferer with such apprehension, present also the most obvious objects of treatment to the physician. It should never be forgotten, that all affections at the sources of nervous power, or origins of nerves, are indicated by pain or disturbed action at the minute and distant extremities; and that this must hold true with respect to the brain and cord, as well as with any of the great nervous trunks in which the phenomenon is more frequently observed. The following case of general irritation of the spine will serve to show how singularly true they sometimes are in the corresponding pains.

III. Bridget Leary, aged twenty-two, complains of constant distressing headachs, with oppression and shrill piping noise in breathing, pains in all her joints, pain at the pit of the stomach, in the sides, round the hips, in the limbs and feet. All these pains are increased by motion or exertion of any kind, and relieved by the recumbent position. She is weak, and troubled with palpitations; there is some feverishness, with whiteness of tongue, but the skin is cool; complains of continued sense of burning in the epigastrium, increased much by stooping or straightening herself, as in bending or extending the spine; says "she often thinks her stomach will light;" feels as if her arm would break when she lifts it, she is seized with such pain there and in the axilla. The oppression is worse at night than in the day-time.

On examining the spine, the whole column was found acutely tender; pressure at the first or second vertebra occasioned pain, which shot forward from the occiput to the brow; a little lower, pain was excited at the larynx; on pressing one of the lower cervical, it occurred at the point where the trachea dips behind the sternum; on pressing the upper dorsal, at the middle of the sternum; from

the third or fourth dorsal to the eighth or ninth, it was excited at the ensiform cartilage; yet lower, at the sides, and in the lumbar vertebræ, pain was excited in the iliac and pubic regions. Pressure behind the trochanter produced pain at the crista of the ilium, at the inside of the thigh, and also in the sides, or in the opposite hip. On the thigh or knee, it excited pain in the shins and toes. The pain was more acute on pressing the first or second cervical, and seventh or eighth dorsal, than any others; which accounts for the headach and pain of stomach having been the most constant and distressing of all the symptoms.

This is by no means either one of the most uncommon or worst forms of spinal irritation. It may be of use, perhaps, to compare it with a case of chronic disease from injury, in which the analogy seems sufficiently strong to assist or influence our views of its nature.

IV. William Collins, a tall, spare man, aged fifty, about two years since, while working in a mill, had his coat seized, and was caught up by the wheel. The machinery was stopped in sufficient time to prevent his being ground to pieces, but his shoulders, back, and neck, were much crushed and injured. He was long ill, and had but an imperfect recovery, remaining affected with paralysis of the upper extremities, contraction of the fingers, and debility of the lower limbs; he also suffered from pain and stiffness of the muscles of the neck, pains in all the limbs and joints, with crackling noise on motion, as in chronic rheumatism, and pains frequently in the head, chest, or abdomen. He has not latterly complained of the back.

The examination of the spine, which was universally tender, gave the following results:

Pressure on the first or second cervical vertebra occasioned pain over the brow; on the second or third, above and about the larynx; on the lower cervical, the lower part of the trachea as it enters the chest, and also at the top of the shoulder and in front of the chest. Pressure on the upper dorsal occasioned it at the superior part of the thorax; on the seventh or eighth, at the ensiform cartilage; on the tenth or twelfth, at the umbilicus. On the upper lumbar, at the



sides and public region ; on the lower lumbar and sacrum, at the groins, hips, and thighs. Behind the trochanter, at the knee and ankle.

When but one point of the cord is affected, the symptoms are proportionally simple : they are more apt to deceive the practitioner, from their resemblance to those chronic local diseases in which the constitution is little disturbed, and because, as has been already mentioned, the patient scarcely ever complains of the back. The following, in which pain of stomach, or at the ensiform cartilage, was the chief ailment, are among the very commonest of these cases.

V. Nelly Neville, aged twenty-two, complains of pain at the pit of the stomach, which commenced about two months since, and has continued without intermission. She has slight cough, with general languor and weakness ; says she is much tormented with headach, and latterly with pain and stiffness at the back of the neck, which are sometimes relieved by tossing or throwing back the head. Her appetite is bad ; tongue whitish ; eyes slightly yellow. Cannot lift a can or basket, without bringing on or increasing the pain. There is tenderness at the seventh dorsal vertebra, pressure on which excites the pain at the stomach ; no tenderness of the cervical. The catamenia regular, but deficient.

This young woman was perfectly cured in a few days by a few purgatives, blistering over the affected part of the spine, and tonic bitters with acids.

VI. J. Enright, aged forty, complains of pain at the lower end of the sternum, with soreness of the part, and slight cough : has been ill with it now for two months ; tongue whitish, bowels natural ; general health tolerably good. There is extreme tenderness about the seventh or eighth dorsal vertebra, pressure on which occasions a darting pain from thence to the sternum, as if he was pierced by a sword.

Cured by purgatives, though more slowly than the foregoing patient. He was a labourer, and unwilling to blister, as it would oblige him to give up his work.

A case, similar in symptoms, though (if we may judge by its termination) widely differing in its nature, occurs in our note-book about the same period. Organic disease acts in the first instance very much like that strictly called functional, simply by pain, or by disturbance or interruption of function. This case, therefore, while it illustrates what Dr. Abercrombie has so strongly inculcated, the dangerous nature of affections of the spine originating in injury, points out the symptoms which must necessarily result from disturbed function of that particular part, and is tolerable evidence of their dependence on it in those lighter and less dangerous complaints.

VII. A middle-aged man, descending from a wall, fell backwards, and came against a rough stone, which occasioned a bruise about the seventh dorsal vertebra. He thought very little of the accident for some days, although there was slight pain and soreness, but then became affected with constant pain at the pit of the stomach; for relief of which he applied at the dispensary. Pressure on the tender vertebræ produced an instant pain at the pit of the stomach. Purgatives and fomentations to the spine were ordered, and he was desired to come on the next day of attendance, when, if not better, he was to be bled and blistered. Nothing, however, was heard of him for three weeks, when a report came that he had died suddenly. On inquiry, it was found he was so much relieved by the medicines that he did not think it necessary to attend: he, nevertheless, had an unaccountable languor and incapability of exertion about him, and occasionally kept his bed. On the last morning of his life, he said he felt pretty well, and would get up and go to work; but, while dressing with this intention, suddenly fell back and expired.

It is not meant, of course, to assume that spinal tenderness is never a mere symptomatic affection: we shall have frequent occasion to speak of cases which were evidently produced by, and dependent on, intestinal, dental, or other irritations. Mr. Abernethy cites some, which, with every appearance of reason, he attributes to disease of the digestive organs: but, even in many complaints of this kind,

especially when existing for any length of time, the spinal affection becomes a serious and absolute disease, reacting on and increasing the disorder which gave it existence, or producing a new train of symptoms proper to itself.

In our early inquiries it was so frequently met with, especially in females, that we found it necessary to make a general examination of the patients attending the dispensary, to ascertain in how far it was to be regarded as an independent affection. The result showed that it was very seldom wanting where those nervous symptoms supposed to indicate disorder of the spinal cord were present, and where there was no local disease to which it could be attributed; while, in almost every instance in which acute or chronic local disease was found to exist, no such tenderness could be detected. Those few cases of local disease in which it was observed, were chiefly acute affections of the liver, or inflammatory complaints resulting from injury; and the former of these were, it is probable, rather an effect than a cause: at least, it is, in any other view, extremely difficult to account for its absence in some intense inflammations which are met with.

The minute attention to the spine which these examinations induced, led to much more interesting inferences than could have been at all anticipated. The great tenderness of the cervical vertebræ, in some cases of sudden fits of insensibility, suggested its existence in epilepsy\*, in some forms of which it was found invariably present; a fact very well agreeing with M. Esquirol's dissections in this disease, which so frequently displayed morbid changes in the cord or its membranes. The connection observable between tenderness at the same part and headach, soreness and pain of stomach, in cases of spinal irritation, occasioned the discovery of its existence in continued fever, in all cases where there was much disturbance of the stomach and head, and

\* When speaking of the diseases induced by irritation of the cervical portion of the cord, we shall give some most extraordinary cases of cure of this dreadful malady.

induced a suspicion that it was equally the source of Dr. Clutterbuck's cerebral inflammation and M. Broussais' gastro-enterite. The occasional occurrence of shivering fits in spinal cases pointed out some analogy between them and intermittents, and, as was conjectured, most acute tenderness of the whole spine was ascertained to exist in the very few of these complaints which fell within our observation during the last month. It was also detected in numerous cases of neuralgia, in many of paralysis, and in all that class of complaints called *mimosa* which came under our notice. In short, we were finally driven to the conclusion that the greater number of these disorders either wholly depend on some affection of the spinal column, or are strangely and importantly connected with it. It must, of course, be obvious that, in cases usually terminating favourably after a longer or shorter period, morbid anatomy can afford no satisfactory evidence in support of such an opinion. It can admit of little more than hypothetical or analogical proof; but if it be acknowledged that the symptoms of these complaints are such as, from the functions of the spinal cord and nerves, we know any derangement of them may occasion; if it be shown that mechanical injuries of its individual portions occasion symptoms which correspond with those induced by irritation of the same portions; that injuries producing a more general affection induce the precise symptoms which we attribute to general spinal irritation; and, above all, that those affections supposed to depend on this irritation are often readily cured by its removal, after having resisted every other plan of treatment; we shall have attained a degree of probability quite as great as we are accustomed to depend on, or give our assent to, in the more established points of medical reasoning.

It is, after all, satisfactory to reflect, that, if more extensive experience should seem to declare the foregoing inferences untenable, the facts must nevertheless hold their ground, and furnish useful matter to the symptomatologist. We have already said enough to show, that one of the most



important of the desiderata in diagnosis, is that which would enable us to distinguish between the diseases of irritation and inflammation, between those of function and of structure, between those attacking the sources of nervous influence, yet developing themselves only in distant tissues or organs, and the simpler affections of those organs dependent upon local causes. If any new illustration of this were wanting, we have it in the late Croonian lecture by Dr. Hawkins on affections of the brain, in which he cites many instances where, from the ambiguity of the symptoms, the disease was supposed to depend on nervous sympathy, and, from the consequent remissness of treatment, terminated in fatal apoplexy. If our views be correct, spinal tenderness would have been discovered in those cases attributed to nervous sympathy, but would have been absent in the inflammatory and organic. This assertion must be received at present as a general one, and with some qualification, especially in affections of the base of the brain immediately adjoining the medulla oblongata.

As, in the present state of our knowledge, strict distinctions, founded on the supposed nature of various spinal affections, must be liable to much error, it seems proper to offer such only as the symptoms would obviously indicate, without assuming that they are in all instances founded on any specific difference in the nature of the complaint. The following may be said to include all which have fallen within our experience.

1st. Cases of irritation of the spinal cord, with tenderness at one or more points of the spine.

2d. Cases with symptoms resembling the foregoing, but unattended by spinal tenderness.

3d. Cases of acute spinal inflammation, attended by pains of a rheumatic character, and by many of the symptoms of general irritation of the cord ; but chiefly marked by high fever, excruciating pain and tenderness in some part of the back, occurring in paroxysms on the slightest motion, and often occasioning or ending in paralysis.

4th. Cases of caries of the vertebral bones and distortion,

which have been so ably treated of by many eminent writers, it is merely necessary to name, as much rarer diseases than any of the foregoing, but having very many symptoms in common with them, and affording frequent grounds for apprehension and error, when the diagnosis is not attentively studied.

5th. The same may be said of those organic diseases of the spinal cord whose pathology Dr. Abercrombie has taken such pains to illustrate. We have met with very few of them in the course of our practice, and those were such as offered little that was new or interesting on the subject.

## CHAPTER II.

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### AFFECTIONS PRODUCED BY IRRITATION OF THE CERVICAL PORTION OF THE SPINAL CORD.

IT seems so difficult to account for the interruption of the functions of parts, except by structural lesion or alteration, that it is not singular we should be very incredulous when called upon to believe the ordinary actions of every organ of the body may be affected, either by preternatural increase or diminution, or total suspension, without the occurrence of any physical change. Hence it is that some pathologists deny altogether its possibility, asserting, with great truth, that, in a system so little admitting of minute examination as the nervous, most important changes may take place, and yet elude all observation. But, in speaking of functional disease, we believe, it is generally meant such affections as are not *traceable to altered structure*, and which admit of a perfect, and sometimes instantaneous, return to health. Whatever may be our reasoning, we have every day the indisputable fact before us, that people become suddenly attacked with symptoms resembling those resulting from organic changes, and yet as suddenly recover their original health, in a way which such changes would not seem readily to allow. These complaints may, perhaps, be said generally to depend on altered relations in the system, rather than on altered structure; and it is on this supposition that they have been so often attributed to vague and inscrutable sympathies. But, however mysterious they may

be, our knowledge of their seat and character seems tolerably clear, derived as it is from the disturbance of function and other symptoms observed on particular changes of structure, and our experience of their usual course and termination. To give assurance of the connection of those disorders dependent on irritation with the great centres of the nervous system, we shall offer, whenever we can, cases of organic disease of these parts, presenting strong analogies of character.

We now proceed to point out more particularly the dependence of the many affections which we have mentioned, on irritation of a greater or less extent of the spinal medulla.

Although, for the sake of illustration, it is perhaps best to give the cases in the order which the affected portion would suggest, it is not intended to take up time with the simpler and less important ones. These, it is true, as being affections solely of the cervical, or of the dorsal, or the lumbar portions, more strictly define the symptoms proper to each: but, independently of the necessity there will be to say something about them in a subsequent part of this work, there are some reasons why they will not answer our purpose here. It seems necessary that a certain extent of the spinal cord should be in a state of irritation or disorder to produce any effect on the circulating system, or on the viscera. The simpler cases, therefore, depending on irritation of a point or limited portion of the medulla, are in general mere affections of one or two pair of the spinal nerves, sensitive or motor, mere neuralgiæ, and cannot furnish us with illustrations of the more important and complex irritative diseases, which it is proposed to reduce to some arrangement. It is only necessary to keep in view, that, in the cases cited as affections of the cervical medulla, the upper dorsal are sometimes implicated, and in those of the dorsal, sometimes the lower cervical, sometimes the upper lumbar. They must each, therefore, have some symptoms detailed not entirely proper to them, but which the intelligent reader will at once refer to their real origin.



## SECTION I.

*Affections of the Sensitive system connected with cervical irritation.*

Acute and chronic headach, browach, aching of the cheeks and face, pains in the breast or side or sternum, or at the shoulder or down either arm, may be mentioned first, as among the most common symptoms of cervical irritation, both in the simple and complex cases. They are continually met with, as well as the subsequent ones of affections of the senses, in cases of organic disease of the cord, though then usually in connection with others of a more formidable nature. The following are taken almost indifferently from our case-book.

VIII. A young gentleman, aged twenty, complained of intense pain in the crown of the head and forehead, with excessive soreness of the scalp and feeling of general illness: is subject to attacks of the kind, and usually relieved by purgatives and lying down. There was great tenderness of the five upper cervical vertebræ, pressure on any of them occasioning the pain in the vertex and brow. Purgatives and rest were again successful in relieving him; the application of leeches and a blister to the nape of the neck, to remove the tenderness, were then recommended. As long as this symptom remains, however effectual the relief, the complaint can only be considered as suspended.

IX. James O'Brien, aged fourteen years, applied at the dispensary, complaining of pain and soreness in the crown and forehead, especially on stooping, sometimes very distressing, and attended with deafness. There was tenderness of all the cervical vertebra; pressure on the first or second excited pain in the vertex and brow. Was ill one year. Recovered by the use of purgatives, and of blisters to the nape of the neck.

X. Ann Lynch, aged nineteen years, troubled with distressing headach, especially of the forehead, with sickness

of stomach and thirst. Pulse ninety-five, tongue white, bowels confined; catamenia regular. Had been ill six days. Pressure on the first or second cervical, or behind the mastoid process, excited the pain severely at the brow. Was relieved by an emetic, followed by purgatives and a blister to the neck.

XI. Mary O'Brien, aged forty years, ill three years, complains of pain in the head, particularly severe over the brows and at the temples, and occasionally confining her to bed for days. She is very weak and nervous; has no appetite, and is worse after eating. Is occasionally attacked with pain of stomach. On examination, there was found extreme tenderness of all the cervical vertebræ, pressure on any of them, or behind the mastoid process, exciting the pain severely at the brow and temples. There was also soreness of the seventh or eighth dorsal vertebra, pressure on which occasioned pain at the ensiform cartilage. In this case there was so much general debility, and so many points of the spine were affected for a length of time, that a rapid recovery was not to be anticipated. She did well after some weeks, by the strictest attention to the digestive organs, a course of tonics, and occasional small blisters to the spine.

XII. Mrs. M. aged forty years, a nurse, complained of headach, soreness of stomach, and soreness and pain of chest, with stiffness at the right side of the neck. This stiffness increased suddenly at times, seizing the muscles like cramp, and followed by hoarseness and dimness of sight. Was debilitated and in bad health. There was great tenderness on pressure at the middle cervical and seventh dorsal vertebræ. This patient was treated like the foregoing, and was also slow in recovering.

The soreness of stomach was, in all probability, referable to the tenderness at the seventh dorsal vertebra, and not to irritation at the trunk of the par vagum. It is then usually accompanied by sickness and loss of appetite.

XIII. Catherine Deely, aged thirty years, six weeks ill, complained of constant distressing headach, with pain in the stomach and nausea after eating. Bowels are in a natural

state, but sometimes griped; catamenia regular. Pressure on the dentata excited the pain in the forehead, and on the ninth dorsal, at the stomach. Recovered under the use of mild aperients, acids, and counter-irritation.

XIV. Anne Day, aged thirty years, complained of headach, soreness of the whole scalp, frequent faceach affecting the branches of the fifth pair of nerves, pain and tenderness down the neck and left arm, which rendered her unable to work, and pain between the shoulders at the left side of the spine. There was tenderness of all the cervical vertebræ, pressure on any of them occasioning the corresponding pains.

XV. ———, a smith aged thirty years, complained of pain at the outer part of the elbow between the external condyle and olecranon, which after a few days removed to the outer part of the arm, a little below the insertion of the deltoid muscle: there was neither heat nor swelling, but there was some tenderness in the affected spot; the pain was very distressing, often disabling him from working. There was acute tenderness at the two or three upper dorsal vertebræ.

XVI. ———, aged twenty-four years, within two months of her confinement, complained of pain in the right upper and lower jaw, affecting all the teeth and the cheek. It seemed to commence at the angle of the jaw just at the termination of the ear, and extended down the neck as far as the clavicle; pressure at the angle of the jaw excited the pain. Complained also of pain at the left side of the neck and shoulder, and down the left arm; there was stiffness and weakness of the muscles, so that she could scarcely elevate it. Pressure on the first cervical vertebra sent acute darting pain through the jaws: pressure on any of the dorsal from the seventh up occasioned the pain down the neck and left arm, it also excited pain as if shooting up through the spinal canal.

XVII. James Gilliard, aged eighteen, ill three weeks, complained of pain in the shoulder at the left side, near the armpit, and in front towards the mamma; tongue white, with some thirst, but the pulse was natural and the general

health good. The cervical vertebræ were tender, particularly the second, which when pressed on, sent a pain shooting from it to the shoulder and up into the brow. The pain of side was worse towards evening, and frequently affected the breathing. This case was treated by purgatives with counter-irritation at the spine, and did well in a few days.

XVIII. M. A. S. aged eleven years, complained of swelling, stiffness, pain and heat of the muscles of the neck, especially at the left side; the left trapezius was tender to the touch, and so contracted at that side, that the left ear almost rested upon the shoulder; she could not elevate her head in the least. But the most distressing part of her complaint was, that she was seized every evening about five o'clock with violent pain in the shoulder, shooting down both arms to the fingers, where it was most distressing. During the continuance of the pain, which generally lasted five hours, she screamed with agony and could not be quieted. She was ill about three months, and had been under various medical treatment without relief.

She now was ordered a grain and a half of sulphate of quinine, and two of extract of henbane three times a day. She had the pain in a moderate degree and for a shorter period on the first night after commencing these medicines, and none ever after; the tenderness of the neck gradually disappeared, the stiffness was soon after removed by a liniment, and she was able to hold her head in the natural position. This seems to be a very singular case. The periodical pain was evidently the result of irritation produced by some chronic disease in parts of the neck contiguous to the cervical vertebræ; for after some time she appeared again at the dispensary, with an indolent scrofulous-looking abscess on the left side of the neck, and an inflamed tumour at a corresponding point on the opposite side, with the same tenderness, thickening, and stiffness of the muscles.

It would be tedious and useless to multiply cases so exceedingly common, or to dwell on the connection of the symptoms with spinal disorder. We cannot, however, avoid



remarking those of pain and sickness of stomach, frequently mentioned as accompanying the headach. Indeed, the stomach is so seldom free, that the headach is usually looked upon as merely symptomatic of its disordered state; which, no doubt, it often is; but much experience in these cases must convince us that the sickness and pain, and loss of appetite, are still oftener themselves symptoms, the result of irritation at the origin of the par vagum. It might, perhaps, be doubted whether disturbance of the stomach from any cause not acting immediately on itself, could ever exist without this irritation. We see that in inflammations, however extensive, of the arachnoid membrane, so long as it is confined to the convex surface of the brain, no effect is produced on it; but when the arachnoid of the base is attacked, vomiting is invariably one of the symptoms. Even the sympathies must have conductors, and, as it seems to be the general belief these are to be found in the nervous system, we can only hesitate between the eighth pair and the sympathetic. There seem to be many reasons for believing that the latter is much less frequently the medium of communication between the head and stomach than the former.

Various affections of the senses, loss of sight, hemeralopia, loss of hearing, noises in the ears, vertigo, spectra or visions, delirium and insensibility, are severally effects of irritation at the cervical portion of the cord, and are sometimes accompanied by headach of a very intense nature. But they are still more frequently met with where the spinal affection is general. Blindness, vertigo, deafness, ringing in the ears, are affections that scarce need particular illustration, appearing as occasional symptoms in almost every severe case which we may have to relate. Hemeralopia is more unusual.

XIX. John Hayes, aged fifteen years, complains, that, as soon as night falls, he invariably becomes blind: he cannot see the furniture or people about the room, when they are perfectly visible to every one else. The candle or fire light appears a broad red haze, just distinguishable from darkness, but making nothing perceptible. He can perceive

any dark object between him and the light, and no more: Has been affected in this way now about a fortnight, and had a similiar complaint a year ago, which continued a good while. There is great tenderness evinced on pressing the second cervical vertebra. He perfectly recovered in less than forty-eight hours, by a small bleeding, an active calomel purgative, and a blister to the nape of the neck; and has since continued well.

The following is also a case in which vision was affected in an extraordinary manner.

XX. A young gentleman, aged seventeen, is frequently attacked with violent headach and sickness of stomach, which symptoms were always ushered in by indistinctness of vision. His first warning of the fit is a sudden appearance of something misty and tremulous before his eyes; soon afterwards he can perceive only the vertical half of any object he looks at, and eventually the outlines fade away altogether into thick darkness. This almost total blindness continues generally for a very short period; the thick dark mist gradually clears off, and the forms of every thing around him are again distinctly observed. He is then instantly seized with intense headach, chiefly affecting the forehead, usually so dreadful in its nature; and accompanied by such distressing nausea or sickness, that he says he could scarce live if it lasted a second day. He commonly finds relief by lying down: the pain is thus more easily endured, and the paroxysm is shorter, terminating in four or five hours, when it might otherwise continue for twenty. Instead of pain, a deep lethargy sometimes supervenes on the affection of vision, during which he lies as in heavy slumber, but frightfully conscious of time passing, and of terrific sights and sounds thronging his imagination. He wakes out of this in a state of temporary delirium; does not know for some time where he is, or what has happened, and speaks incoherently. Even after the subsidence of the headach, although there is much less confusion of mind than after the lethargy, the memory is always very imperfect for some hours. He cannot recollect the words he wishes to make use of, but employs others wholly inap-

plicable in their stead ; and of this mistake he is always conscious at the moment. To these attacks he has been subject for about two years, but in their intervals he has sometimes been affected in a very different way. He awakes suddenly out of his sleep at night in dreadful apprehension, for which he cannot account. There is a continued crowding and rushing of ideas through his mind. He feels as if every thing he did, and all that was done about him, passed over with a frightful and hurried rapidity. This at last wears away, and is generally, even from the first, more or less under the influence of his will ; an effort to check the current of his ideas, and divert it into another direction, frequently proving successful.

On examination, there was found great tenderness of the second cervical and of the seventh or eighth dorsal vertebræ. When this last was slightly pressed upon, he felt a horrible sensation shoot through his whole frame. It was quite indescribable, and had nearly made him faint. He expressed the greatest apprehension at the thought of the pressure being repeated, and had a disagreeable feeling in his back for the entire day afterwards.

As this case fell accidentally within our notice, and was not at any time in our care, little of the treatment can be given. He says the symptoms have been considered as the result of bile and a dyspeptic stomach, but that they do not seem to yield much to remedies, and still continue to recur as frequently as at their commencement. This is precisely what might be expected under general treatment. When once spinal disorder is induced, and has persisted for any length of time, it becomes, like chronic inflammation in the synovial membranes, altogether independent of its original cause, whatever that may be, and requires distinct attention. Attacks of this kind are often so troublesome and intractable as to be attributed to incurable organic disease ; but although they may induce such mischief, if long neglected, they are usually, like symptomatic affections of the heart, the result of disturbed function alone. There can be scarce a doubt, but, in the foregoing instance, the application of leeches, or cupping at the nape of the neck, repeated small



blisters, followed by a stimulating liniment to the whole of the spine, and strict attention to the general health, would have succeeded in effecting a cure.

There is much reason to think cases of amaurosis sometimes depend on irritation of the cervical portion of the medulla. The connection of the fifth pair of nerves with the function of vision, which M. Magendie has so clearly ascertained, might readily suggest such a dependence. Indeed, this pair of nerves is so necessary to all the organs of sense, in the performance of their functions, that it does not seem extravagant to suppose those cases of slight insensibility, occurring in hysterical patients, may be sometimes caused by a temporary suspension or disturbance of its powers alone. They can neither hear, see, taste, nor smell; they have only one faculty still connecting them with the surrounding world, general sensation; and over this the fifth pair has no influence.

The great discrepancy which prevails in the opinions of modern physiologists, both as to particular facts and the inferences to be drawn from them, is often exceedingly perplexing to the practitioner, who has seldom leisure or opportunity to repeat the experiments. Mr. C. Bell does not seem to think Magendie correct in his conclusions about the influence of the fifth pair over the nerves of the peculiar senses, and attributes, with much reason, the blindness, deafness, loss of smell and taste, which occurred in a case of extensive disease at its origin, to inflammation resulting from want of the common sensibility necessary to the protection of the different organs. It was so far an inappropriate illustration. But we cannot see how this is to explain the sudden loss of sight, or smell, or hearing, on division of the fifth, before inflammation can be said to exist, or the mischief which we may infer from the loss of common sensation could possibly occur. We can understand very well the necessary dependence of motion on sensation, but the dependence of the action of one sense on that of another is not capable of explanation, without admitting a new physiological law. Mr. Mayo's experiment of the division of the fifth pair within the cranium offers nothing conclusive on



this subject, as the section of the nerve was imperfect. But it seems well worth remarking, that several eminent writers on diseases of the eye mention the frequent occurrence of amaurosis from wounds or injury of the supra or infra-orbital branches of the fifth, and this without inflammation or the slightest observable change in the structure of the organ: in fact, Mr. Guthrie, who takes more particular notice of these affections, attributes them, not to any diseased action excited in the eye, but to sympathy; which is nothing more than supposing them to depend on some *unknown influence of the fifth* over the optic. In these cases, when alteration of structure is observable, Mr. Guthrie conceives there has been always an injury of the eye itself. There may perhaps be found, in the cases which we shall give, some pathological phenomena still more confirmatory of M. Magendie's inductions; but, if we were to search for illustrations, it would be difficult to find a more favourable one than is furnished by Mr. Bell himself, in the paper containing his comments on this subject: the case of Fred. Hill. Although it has been so recently before the public, we venture to restate it.

XXI. "Frederick Hill, ætat. ten, subject from childhood to a pain in his ear, was, twelve months ago, seized with obstinate pain of the left ear, which gave him no rest night or day. The pain extended to his head and face, and appeared sometimes to be *in the bones of his forehead and sockets of his eyes*. It then affected his teeth, and he had toothach *in every tooth in his upper jaw*. After this his left eye became affected, and *he lost his sight*. From this attack he recovered, as his mother says, by large bleedings, leeches, injections, shaving the head, and blisters. He had once or twice discharges of matter, preceded by pain, fever, and delirium, and followed at last by epileptic fits, on the recovery from which he was speechless. He was so irritable, that the slightest unexpected noise, even the striking of a clock, would bring on one of these fits; and having thrown himself down in a paroxysm of passion, about a week after his admission to the hospital, he became instantly deaf. His arm was afterwards observed to become useless: it

hung by his side; he could move the fingers, but not the arm, from the middle of which to a little below the elbow was acutely painful when touched. The actions of respiration were perfect. When he smiled, there was no inequality in the action of the muscles of the face; he was said to make noise enough in laughing, and hallooed out when cuffed, but there was no articulate sound. He understood every thing communicated by writing. When asked to speak, and the throat was grasped during the effort, there was no motion perceptible in the muscles of the tongue, yet he could masticate and swallow with ease; he could nearly touch the point of his nose with his tongue, or turn it down to the chin or sidewise. There seemed, nevertheless, an utter inability to the pronunciation of words; the consent of action between the chest, larynx, and mouth, seemed to be lost. The boy gradually recovered the use of his arm, and having left the hospital, suddenly recovered his hearing and power of speech at the same moment, some time after; a gush of matter taking place into the mouth at the time it occurred."

The explanation of this interesting case does not seem difficult. An abscess from disease of the temporal bone produced irritation at the base of the brain and medulla oblongata, "disturbing," as Mr. Bell justly expresses it, "the operations of the nerves, without altogether destroying their influence." The fifth pair became affected, and *there were pains in the forehead, in the teeth of the upper jaw, and blindness.* The seventh afterwards partook of the disturbance, or was affected through the fifth. There were finally irritability of mind, *delirium and epileptic fits, followed by speechlessness and paralysis of the left arm;* all of which are common results, as we shall afterwards show, of irritation at the upper part of the spinal column.

Mr. Bell does not say whether the blindness was sudden, but we may infer that it was. Had it been the result of inflammation, consequent to lost sensibility of the fifth, there must have been disorganization of the eye, as in Magendie's case, which it is evident there was not, as he perfectly recovered his sight; and had it been the result of disease

the origin of the optic nerve, the right eye should have suffered, and not the left, as the influence of these nerves is across, while that of the fifth is direct. The sudden recovery of hearing and of voice seems to make it yet more probable that all these symptoms might be fairly referred to irritation propagated from the internal ear to the base of the brain; in short, to functional derangement. And it is here necessary to call the attention of the reader to the remarkable similitude which this case presents to a train of symptoms occurring in the first one given in these papers. The lady, after suffering a length of time with an indisputable affection of the spinal column, in which *headach, aching of the forehead and facial branches of the fifth*, were prominent symptoms, was attacked suddenly with violent oppression, *blindness of the left eye, deafness of the left ear* (omitted in the statement), *paralysis of the left arm, and speechlessness*. None of these paralytic affections were perfect, except the last. The eye was slightly sensible to light, the ear to very loud sounds, and she could, like the boy Hill, move the fingers, but not the arm; but the voice was utterly gone. This seemed to depend on paralysis of the recurrent, and not of the lingual. The mind, the expiratory powers, and motions of the tongue and lips, were perfect. She could express herself on paper, or make herself understood by the usual articulate motions, which it would appear the boy was unable to do.

The following cases must, we imagine, be looked upon as equally illustrative of the influence of the fifth pair of nerves on vision: and of irritation of the cervical cord on the fifth pair.

XXII. A. B. applied at the Dispensary in consequence of having lost the sight of his left eye within the last fortnight; he could barely distinguish the light, or perceive dark bodies moving between him and it. He had no pain of head, or illness previously, but was seized with the blindness very suddenly while at labour; he had toothach at that side of his face, which came on much about the time his vision got bad; the iris was very sluggish in its movements, scarce contracting or dilating perceptibly, and



became of a green colour, but there was no deposition of lymph, or irregularity of margin. On examining the jaws, the gums of the upper and lower at the left side were deeply florid, and apparently inflamed, but not swelled; there were several decayed teeth at both sides of the mouth, but he had pain only in those of the left: the pain was not confined to any particular tooth; the sensation in the left cheek and nostril was not apparently diminished. There was extreme tenderness on pressure at the second and third upper cervical vertebræ. The teeth at the left side were ordered to be drawn; a blister to be applied to the neck, and calomel and opium to be taken three times a day. The case has only been two or three days in our care.

XXIII. Margaret Nealon, aged twenty-two, a nurse, after her delivery, was affected with hesitation in her speech, stuttering and partial loss of sight in the left eye; complained that there was always a cloud between her and whatever object she looked at. In the sunshine, saw black flies moving before her eyes; but in the dark, sparks or flashes of light. There was great tenderness of the second and third cervical vertebræ, exciting pain about the larynx, and of the fourth, fifth, and sixth, exciting it at the lower part of the trachea where it dips behind the sternum. We saw this patient only once, and have not been able to make out either the progress or result of her case.

XXIV. Kitty Hanley, aged fourteen years, catamenia never appeared: about six months ago, was attacked with pain in the right eye and brow, occurring only at night, and then so violently, as to make her scream out and disturb every one in the house; it afterwards occurred in the infra orbital nerve, and along the lower jaw in the teeth, and there was inflammation of the cornea, with superficial ulceration and slight muddiness. Tenderness was found at the three upper cervical vertebræ, pressure on any of them exciting severe pain in the vertex and brow, but none in the eye or jaws, where it is never felt except at night.

XXV. M. K. aged thirty, a fisherman, complained of dimness of vision of the left eye: the cornea of which was slightly opaque and the conjunctiva vascular; had pains in



the temple, cheek-bone, and upper and lower jaw at the left side, and soreness or ulceration of the gums and of the left half of the tongue. He complained also of pains in the head and in the sacrum, extending forward to the hip and pubes. There was tenderness of the cervical vertebræ and of the sacrum. He attributed his complaint to a syphilitic affection which he had some months before, and for which he was salivated with the oxymuriate of mercury.

In neither of these cases can we give the progress or event, as the patients lived at a great distance. The sensibility of the affected side of the face was perfect in both.

Chronic ophthalmy will be found very frequently to depend upon either spinal or cerebral irritation, especially when it is of a remitting or intermitting character. We have very often met with it in connection with what appeared to us to be cases of cerebral epilepsy, the eyes always becoming worse on the approach or occurrence of the fit; and we have no doubt that it often exists as a symptom of nervous irritation, when the latter, too slight to occasion epilepsy or other violent results, is not in the least suspected.

We shall give an instance in which the dependence of the ophthalmy was obvious, although it belongs properly to the cases of general irritation of the cord.

XXVI. Margaret Doherty has been for many years suffering with intermittent ophthalmy and headach; the former always improving, or becoming worse, as the pain of head was lesser or greater. There was a granular state of the lids, with vascularity and muddiness of the cornea. She complained of pains in the neck and chest, and sometimes in all her limbs; general weakness, tremor, and numbness of the arms and legs. Her arms were often seized with sudden numbness and loss of power, so that she was in danger of dropping any thing that happened to be in her hands. She was also subject to extreme coldness of the thighs and legs, and occasionally to faintings. There was general tenderness of the spinal column.

All local treatment of the eyes was in this case wholly

unavailing ; but they gradually recovered by the use of general tonics and attention to the bowels. Whenever the head became worse than usual, nothing did so much good as large doses of the carbonate of iron. The eyes were always immediately benefited by it, and just in the proportion in which the pain of head was diminished \*.

Next in frequency to affections of the fifth pair, from irritation of the cervical portion of the spine, are perhaps those of the par vagum ; and we shall often find, that, in severe cases, they alternate with one another. This indeed we might anticipate from the proximity of their origin, the trunks of both growing from the floor of the fourth ventricle.

The affections which we have ventured to connect with disorder at the origin of the par vagum, are sickness, vomiting, loss of appetite, inordinate hunger or thirst, pain at the stomach, pyrosis, and disorder of the respiratory system. It is much to be regretted, that, notwithstanding the particular investigations of many eminent physiologists, our knowledge of the functions of these nerves is still very uncertain : our opinions on the subject must be formed principally by the consideration of such pathological facts as come within our experience. Cases have been already related, in which nausea and vomiting were constant and uncontrollable symptoms, coexistent with tenderness of the cervical spine, and whose whole progress could leave little rational doubt as to their dependence : but we shall presently offer others of a still less disputable character, and which must at the least prove that the pneumogastric is a nerve of peculiar, if not of common sensation. The supposition that it does possess even common sensation seems to be supported by the strongest probabilities, although in a

\* To what are we to attribute the violent remittent ophthalmia described by Dr. Curry, some years since, in the third volume of the *Medico-Chirurgical Transactions*, as affecting himself? It resisted bleeding, blistering, purgatives, bark, the solution of arsenic, and all the usual plans of treatment ; but got well at once by large and regularly-repeated doses of opium.

late publication on these disorders an opposite opinion is maintained \*. As the experiments put forward in proof of that opinion appear at a cursory glance very conclusive, it is necessary to show that others, equally satisfactory, favour our own conjecture, before offering any reason suggested merely by the observable phenomena of disease.

With regard to its being a motor nerve, "the analogy," it is observed in the work alluded to, "between the portio dura of the seventh and the pneumogastric, is so striking as to excite the strongest suspicions that their functions or properties are similar: they both arise by a single series of fibrils from a distinct portion of the spinal marrow, and not by double origins or distinct roots from the two great spinal columns, like the fifth pair and spinal nerves."

Now it would appear to us, that the analogy between the fifth and eighth is infinitely more striking; the former supplying or becoming accessory to the sensations of the organs of the intellect and of the peculiar senses; the latter of the organs of respiration and digestion: and in this view these two nerves certainly become the most important and interesting of any in the whole frame. There would seem to be some error in the anatomical statement of the origin of the pneumogastric, as a small ganglia, the sign of its connection with the posterior column, is formed both on the glosso-pharyngeal and itself; and hence MAGENDIE, BELL, MAYO, and WILSON PHILIP, all unhesitatingly assert that they possess sensibility. It is to be remembered also, that the muscular fibres of the stomach cannot be excited by irritating the eighth pair, in the way a muscle of voluntary motion may; and that, as Magendie has shown, even the gizzards of birds will not contract by such irritation—a fact totally discordant with the supposed analogy between it and the seventh: and it fails yet further in its being apparently superfluous as a mere motor nerve, since the motions of the stomach and intestines are quite independent of it. This is not at all the case with the seventh and the

\* "Nothing further, I presume, need be said to prove that the pneumogastric is not a nerve of sensation, and consequently that it cannot be the seat of pain."—TEALE on *Neuralgic Diseases*.

parts it supplies, nor even with that portion of the eighth which is acknowledged on all hands to possess a motor power, those branches which supply the dilators of the glottis, and preside over the alternate contraction and relaxation of the lower third of the œsophagus.

It may be inquired, if the eighth pair be simply motor nerves, what supplies the stomach with sensation when the spinal nerves are palsied and insensible? In the case of Palmer, related by Mr. C. BELL, the abdominal muscles hung loose and inactive, and the skin senseless, in consequence of disease of the cervical vertebræ, but the stomach retained its sensibility; it is fair, he says, to conclude through the influence of the par vagum.

Again, if there is any fact in pathology at all clear, we think it is that irritation may be propagated by this nerve, from its capillary extremities to its origin in the brain; and it appears as impossible to us that a mere motor nerve should transmit this irritation, as that it should impart to us the consciousness or intelligence of its own actions. This it is not easy to conceive it does, as it seems impossible for two qualities or powers, however subtle, to traverse the same medium at the same moment in opposite currents; a volition passing out and a sensation returning.

But there are many more positive reasons for our attributing to it at least a peculiar sensibility. Dr. Wilson Philip, whose inquiries have been so specially directed to its uses, and who has given the subject a rare attention, believes that the peculiar sensation obliging respiration belongs to it. "The part of the brain," he observes, "to which impressions from the lungs are conveyed, is evidently that where the eighth pair of nerves which supplies them originates, and from which the spinal marrow proceeds. These nerves are nowise connected with the muscles of respiration; they only convey the sensations excited in the lungs: yet it appears, from the experiments in which M. Le Gallois removed the brain by slices, that respiration continued until he removed this part of it, and then instantly ceased. In these experiments the power of the muscles of respiration, and the nervous power which excites them, still



remain, as may be easily ascertained by stimulants properly applied to the spinal marrow. It is the sensation which excites to inspire, that is, the influence of the sensorial power, which is withdrawn." In full accordance with this, we may mention Magendie's statement, that the action of the posterior portion of the fourth ventricle is in strict harmony with that of the eighth pair; his suggestion that appearances of disease may be found there in asthmatic cases, and our own frequent experience of oppressions connected with tenderness at the upper cervical vertebræ. It would seem equally probable that the peculiar sensations of the stomach depend on this nerve. Nausea and attempts at vomiting may occur after division of the eighth pair, and even after excision of the stomach, because the sensations reside in the posterior portion of the fourth ventricle; but if this was disorganized, no such sensations, we believe, could be experienced. Magendie has shown that vomiting from an emetic may be repressed by compressing the fourth ventricle at the origin of the par vagum; and we shall find many cases in which uncontrollable sickness and retching was at once allayed by applying a blister to the upper cervical vertebræ. Instances of spasm of stomach terminating fatally are met with, in which, on examination, no diseased appearances could be detected, except at the base of the brain; and we may further refer to the frequent occurrence of a total disrelish of food, or of greedy hunger, in certain cerebral affections.

DESMOULIN and MAGENDIE, in their late work, after detailing numerous experiments illustrative of some of the uses of this nerve, conclude that it most probably serves to establish intimate relations between the stomach and the brain, to transmit impressions giving notice whether any noxious substance has entered, and whether it is capable of being digested.

It only remains to make a few observations on Mr. Broughton's experiments, which, however apparently absolute, by no means prove so on examination. In the first place, the principle can scarcely be universally admitted, that, on

pricking a sensitive nerve, the animal must necessarily complain of pain: in fact, in the very experiments quoted, in which the par vagum was pierced by a pin, pinched, and slowly cut through with a scissors, pain should have been experienced, at all events, at the larynx, pharynx, and cesophagus; as all our best physiologists seem to agree that the fibrils of that nerve distributed to these parts at least are sensitive, as well as motor. It should have been considered, too, that the sympathetic—to establish whose sensibility this property is denied to the par vagum—is itself totally devoid of sensation, and may be cut and mangled and removed to an incalculable extent, as Magendie asserts, not only without pain, but without manifest disorder of any kind.

It should be still further considered, that, although pain may be occasioned by pinching or injuring a nerve of common sensation, the instrument of a peculiar sense cannot be called into action by any but its own appropriate irritation. Pinching the origin of the optic or olfactory nerve could never occasion vision or hearing; the pneumogastric may be a nerve, therefore, of a peculiar, if not of a common sensibility.

But when we reflect on all that has been said, its strong analogy with the fifth, which is a motor nerve to one set of organs, a nerve of common sensation to another, and a nerve of peculiar sensation to a third; when we reflect that pain of stomach is a still more common attendant on cerebral disease than hunger or nausea; that it is met with in nearly all cases of cervical tenderness, and that the gastric soreness in typhus is almost invariably accompanied by a similar symptom; it will not be thought too much to infer a strong probability that this nerve possesses even common sensation.

We now proceed to show that these several affections, sickness and vomiting, inordinate hunger and thirst, loss of appetite, and pain or tenderness of stomach, which are generally, both in practice and in the schools, attributed to some diseased or disordered state of the organ itself, are very

frequently dependent on disturbance at the origin of the par vagum, and always in those instances indicated by tenderness at the cervical portion of the spine.

We shall first relate a case proving the dependence of vomiting on injury of the cervical spine, although very unsatisfactory with respect to any inference deducible from the treatment.

XXVI. Michael Guerin, aged sixteen years, was struck with a hurly on the back of the neck, about the situation of the fourth cervical vertebra. The blow was so violent that it brought him to the ground. He was removed to bed, and was soon after seized with vomiting: he complained of *tenderness of stomach*, had a hard, quick, irregular pulse, with whiteness of tongue and thirst, but no pain. There was no mark where the hurly had struck him, though the part was sore to the touch. He was bled and purged, and the neck repeatedly blistered within a few days; he had effervescent draughts, opiates, and other remedies, and all with very little relief to the symptoms, except that the thirst and feverishness subsided, and the pulse became somewhat softer and slower. A degree of subsultus tendinum, which had shown itself on the second or third day after the accident, was also diminishing, and eventually wore away. He now lay in the bed with a cool skin, a natural countenance, the tongue almost clean, and the spirits undepressed; yet he was unable to retain the smallest particle of food or drink for one moment on his stomach. After four or five weeks passed in this manner, during which nothing seemed so remarkable as the little emaciation or debility induced, notwithstanding the continual rejection of the food, a gradual improvement took place, and the stomach eventually became tranquil, and recovered its tone.

There appeared to be little or no nausea in the foregoing case, and the food was ejected without force or distress, as in one or two instances mentioned by Dr. BROWN: this is, however, unusual, and chiefly observable in protracted attacks. The following instance may serve to illustrate this; but it will be found chiefly interesting from the resemblance



it bears to a severe inflammatory attack, and the obvious correctness of the diagnosis furnished by the spinal tenderness.

XXVII. A lady, aged fifty-six, was seized with violent pain in the pit of the stomach and right side, attended with excessive soreness along the margin of the lower ribs back to the spine: there was constant distressing nausea and vomiting, heat of skin and thirst, quickness of pulse, and furred tongue; the pain came on at intervals with increased violence, like paroxysms of colic; and, after some hours, the tenderness of stomach and side became so acute that the weight of the bedclothes could scarcely be borne. In detailing all the symptoms with which she was affected, and speaking of her headach, she happened to mention that she felt a stiffness of the muscles of her jaws, as if she was about to be attacked with locked jaw. This immediately suggested an examination of the spine; and extreme tenderness of the lower cervical vertebræ, of all the dorsal from the fourth downwards, and of the superior lumbar, was discovered, although she did not herself previously suspect its existence. There is perhaps, generally, no objection to the abstraction of a small quantity of blood in these severe cases, even in the belief, as in this attack, that they are not inflammatory; but from the general feebleness of the lady's constitution, it was deemed unnecessary. The vomiting, which had continued for two days previous to her sending for assistance, and resisted other usual remedies, was relieved by a blister to the stomach, where it was applied rather than to the nape of the neck, at the anxious desire of the patient. Irritation at the trunk of a nerve is sometimes unaccountably relieved by blistering the minute extremities, as Mr. BRODIE has shown in the occasional benefit derived from blistering the knee in affections of the hip-joint; and, as it is frequently successful in allaying irritability of stomach, from whatever cause it arises, when directly applied, it was not thought necessary, in opposition to the lady's wishes, to make the application now to an unusual place, where the advantage could be considered only as conjectural. Her recovery, which was frequently interrupted



by a recurrence of the vomiting, though not to so great a degree, proved very slow, and was effected chiefly by the use of continued mild purgatives, with anodynes, and a strict attention to diet.

In some weeks after her apparent recovery, however, the vomiting returned, with its concomitant, the tenderness of the cervical vertebræ, but without any serious illness or distressing symptoms. It was invariably brought on by taking food; but there was now no nausea and no feeling of distress, the contents of the stomach were simply rejected. She eventually gave up eating breakfast altogether, and confined herself to one meal a day (her dinner), which, however, she never retained long. After several weeks had been passed in this way, it was singular to observe, as in the case of the boy, how little there seemed to be of debility or emaciation; there was scarcely any change in the lady's appearance. As she had had similar attacks before, at different periods of her life, with long intervals of tolerable health, it seemed fair to infer that the present was not connected with organic disease. Attention to the general health, and to the cervical portion of the spine, were therefore recommended. Whether this was observed, or how much longer the affection lasted, we have not learned.

The beneficial effect of applications to the cervical portion of the spine, in allaying nausea and vomiting, which were in the foregoing case only conjectured, we had afterwards many opportunities of witnessing in the more complex instances of spinal irritation. The following seem particularly illustrative, although obviously cases of profound organic disease. They show very clearly, that the mode in which chronic structural affections occasion vomiting is very often by irritation of the spinal cord. These, we may mention, are frequently attended by its diagnostic symptom—spinal tenderness—though acute affections are not.

XXVIII. In an accidental visit to the House of Industry, a patient was pointed out, who had not kept any thing on her stomach for five months: she was a young girl, about twenty-five years of age, and was pale, weak, and

greatly emaciated ; she was constantly confined to bed ; the catamenia was suppressed for seven months ; she had taken much medicine without any benefit. On examination there was found extreme tenderness of the second, third, and fourth cervical vertebræ ; the slightest touch making her shrink and gather her features ; there was no soreness or hardness in the hepatic or gastric regions, but the abdomen was much sunk, as is usual where there is general wasting. From the appearance of the patient, little was expected from any remedy, except perhaps some alleviation of suffering ; and, as the vomiting was one of the most distressing symptoms, a blister was ordered to be applied to the tender cervical vertebræ. In a few days afterwards, we learnt that, as soon as the blister had risen well, the vomiting immediately ceased, and did not seem inclined to recur. Directions were, however, given to repeat the application, which was accordingly done ; and, after the lapse of several days more, there was no return of the complaint : she was perfectly free from vomiting, and entertained hopes of recovery.

XXIX. Michael Hennesy, aged thirty years, ill six months—a pale emaciated man, with symptoms of diseased liver and tubercular lungs—complained that he had not kept a meal on his stomach for nearly half a year, vomiting almost instantly after eating or drinking. He had little appetite, but much thirst, cough, and oppression ; a dry skin, white tongue, and feeble pulse at 110. He had been in one of the Dublin hospitals for a considerable time without benefit. There was great tenderness of the cervical and upper dorsal vertebræ, and he complained of a sensation of a load between his shoulders. Although this was quite a hopeless case, and beyond all treatment, we were anxious to ascertain the effect of a blister in allaying the irritability of stomach. It was accordingly applied over *the upper dorsal vertebræ* ; and from the moment the skin became inflamed, the vomiting ceased. It had not recurred several days after, when he called on us again. We do not know how he got on subsequently ; but heard that he went to the country, where, at the end of a few weeks, he died.

We had no opportunity of witnessing the progress of the former case either; but heard that in some time the girl grew very ill again, and at last died. There was no inspection of the body. It was a singular circumstance, that her bowels had been for a long period very costive, so as scarcely to be moved by any medicine; but after the application of the blister, they became perfectly free, and even evinced a disposition to diarrhœa.

XXX. A young lady, fair, and of delicate make, felt a gradual and uncontrollable languor growing upon her, attended by frequent headach and loss of appetite. After continuing in this state for some weeks, she was attacked with sickness of stomach and violent ineffectual efforts at vomiting, brought on by the slightest twisting or bending of the frame, or raising herself to the erect position. It was accompanied by swimming of the head and giddiness, with distressing headach, and followed by frequent fits of syncope, or insensibility, in which she used to remain for one or two hours, pale, cold, and apparently lifeless. She was sometimes affected with palpitations and great sense of sinking, with pain in the stomach and sides, especially the right, and extreme coldness of the feet; she had no appetite; the pulse was eighty; the skin cooler than natural; the tongue clean. The pain, sickness of stomach, and retching, were considerably relieved as long as she remained in the horizontal position; but the slightest motion of the trunk occasioned their instant recurrence, so that, when making the bed, it was found necessary to remove her in a recumbent position. She constantly complained of inexpressible languor. There was acute tenderness at the first and second cervical vertebræ, and it existed in a less degree in all the dorsal.

She was for some days treated by saline draughts, opiates, antispasmodics, and mild purgatives, but with little apparent benefit; the headach, giddiness, retching, and fits of insensibility, still continuing to recur on the slightest movement. A blister to the neck was then ordered, and there was immediate relief to all the symptoms; even the pain in the sides abated, and warmth returned to the skin. We

could not learn that there had been any suppression or interruption of the catamenia; but it occurred on the next night, and the young lady was up and well in a few days.

Loss of appetite is so usual a symptom in all diseases disturbing the health, that it would be little satisfactory to state cases, in which, after all, its dependence on disturbed function of the eighth pair, must be in some degree conjectural. This is, however, by no means true with respect to hunger or thirst, which, occurring in the course of any disease previous to convalescence, must be looked upon as symptomatic of some peculiar state of the cerebral substance at the origin of the par vagum. Thus, in cases of hydrocephalus, of apoplexy, and paralysis, where there is a partial recovery, or the disease does not become quickly fatal, the patient will frequently ask for food, and, if indulged, eat enormous quantities of the plainest diet. The following singular instance of spinal irritation, in which hunger was the first link in the chain of morbid symptoms, has occurred to us within these few days.

XXXI. Mary Howard, aged thirty-three years, ill four weeks, complains that she becomes so hungry immediately after eating her breakfast or dinner, that she is ready to faint; her stomach then becomes sick, but she never vomits; and this is followed by pain, sometimes very severe, in the epigastrium, which usually lasts about an hour. The catamenia is regular, the bowels free, tongue a little white, and pulse natural. On examining the spine, there was considerable tenderness at the second cervical vertebra, and a slighter degree at the first and third, but none whatever in any of the dorsal; there is pain on pressure of the stomach, but none is excited there by pressure on the affected vertebræ.

A case of a much more aggravated nature, in which inordinate hunger and thirst occurred in the course of a tedious illness from spinal irritation, came under our care some months since.

XXXII. A young lady of a very delicate habit had been for a length of time suffering, at intervals, with oppression,



constriction of chest, hysterical fits, and troublesome palpitations. She had tenderness of the cervical, of the middle and lower dorsal, and sometimes of the lumbar vertebræ. She sometimes suffered from neuralgia of the fifth pair of nerves, occasioning distressing toothach: when this was relieved there was generally pain and sometimes sickness of stomach, with oppression or palpitation, and pain in the middle of the back (about the seventh or eighth dorsal vertebra), or perhaps the irritation passed lower down, and there was tenderness of the lowest dorsal and upper lumbar, with pain of bowels and diarrhœa: her general health was tolerably good. Much medical treatment had been adopted, with considerable temporary relief to the symptoms; but as they were nevertheless apt to recur, she was ordered change of air and sea-bathing. While she was at the sea-coast, she was attacked so severely with the oppression, pain of stomach, &c., that she was directed to apply a blister over the upper dorsal vertebræ, which was to extend as low as the eighth or ninth. This occasioned a distressing degree of irritability and disturbance of the constitution, evincing itself especially in the extraordinary hunger and thirst it excited. We shall give an extract from a letter received from her sister at the time, which will best explain the state she was in. "The blister rose very well and discharged freely, but the matter that came from it after the second day grew very thick, and did not flow off as it did before; the sore too looked very strangely, but on applying basilicon instead of the white cerate, its appearance became more natural; she complained, however, much of pain in the left side, which prevented her from lying on it, and of insatiable thirst. Some ale was brought to her, which she drank without stopping. She drank a whole bottle of Clonmel ale in a few minutes, besides wine, which she asked for repeatedly. She rested tolerably well that night. The next day, Thursday, she chose to get up and come down to the drawing room, where she lay on the sofa. She seemed weak, and complained much of her sides, particularly the left. She ate very heartily, however, and

took two glasses of wine before dinner. At dinner she ate broiled mutton, drank a bottle of ale, and said that nothing but wine and ale could satisfy her. She had an hysterical fit of crying, but soon became calm; and seemed finely that evening, except for the pain in her side, which she said nothing but eating relieved. After tea she went to bed, and about 9 o'clock asked for an egg and ale for supper. This she got, and asked for another. I thought the blisters discharging so much must have weakened her, and feared to refuse. During that night she got seven glasses of wine, and draughts of camphor julep! At length I positively refused her any more, and entreated her to be still and calm; for she was frightfully impatient, talking incessantly, and begging for wine and ether. She had no oppression, but had the palpitation that night and very much the following day. Her stomach at last grew very sick, and she discharged it, throwing off much bile: she seemed better afterwards, and grew a little composed. Next day I fed her thirst with slops and broths. She was exceedingly ravenous. She is now much better; but I write to know if her diet should be regulated, and whether she should get the ale and wine. I think a regular portion of each daily would be better than taking none generally, and then using so much when she is ill."

To understand this case fully, it should be mentioned that this young lady had, in her general state of health, a very slight appetite, and was never accustomed to more than the smallest quantity of wine or ale at any time. It was singular to see the usual order of things so completely reversed when she became ill; for instead of losing her appetite, as others would have done, her hunger grew ravenous, and her thirst insatiable. This state we believe is connected with a feeling of nervous sinking, which is in some measure relieved by any thing, whether solid or liquid, taken into the stomach. It does not arise from direct debility, and would be best relieved by an opiate, followed by some aperient. It would not, however, be altogether safe to refuse giving some proportion of the stimulant; the little

effect it has on the pulse or head being a tolerable proof that there is some need for it.

XXXIII. We shall never forget a case of sudden, unquenchable thirst, which we once witnessed in a child who was ill with irritation of spine; four or five of the lower dorsal vertebræ being swelled and tender, and occasioning the usual symptoms of tightness, pains in the bowels, and general delicacy. Having got some antimonial preparation to relieve a cough at the close of a severe illness, vomiting occurred, and she was soon after seized with spasmodic yawnings and craving thirst. No patient in the most burning fever ever seized the bowl with such wild eagerness of look, or drank with such unquenchable desire. Draught after draught was swallowed with rapidity, and still the eye glanced about with almost frantic impatience for more! more! At length she got some antispasmodic, ether and ammonia we believe, and became somewhat quieter, and in half an hour was perfectly relieved. During the attack, the pulse was too quick to be counted. The child was not in the slightest degree feverish when it came on, which was quite suddenly after the sickness of stomach and retching.

Very frequently, as in this case, the sickness or nausea is accompanied by pain; sometimes almost constant, as in gastrodynia, sometimes occurring, like cramp, in sudden, violent fits. The pain, in either instance, occurs without the nausea; but as this seemed to be the case most frequently with the former, and as the attendant cervical tenderness was almost invariably accompanied by a similar tenderness of the seventh or eighth dorsal vertebra, we were, at one period, strongly inclined to believe the constant pain of stomach was superficial—a simple neuralgic affection of one of the dorsal pair—while the deep-seated, cramp-like pain was in the stomach itself—dependent, perhaps, on an affection of the eighth pair—and therefore more frequently accompanied by nausea. Subsequent observation did not seem to corroborate this conjecture; nor can we yet understand why, in deranged functions of the stomach, we have sometimes tenderness of one of the cervical vertebræ only, sometimes of the seventh or eighth

dorsal only, sometimes, and most frequently, of both \*. The fact of the dependence of the pain on irritation or disease of some portion of the spine, which is itself of great practical importance, can, at all events, be sufficiently established. We shall first quote a case from the Glasgow Journal, to show the connection of cramp of the stomach with disease at the base of the brain.

XXXIV. "A lady, twenty-eight years of age, was affected, about twelve hours after her first confinement, with well-marked symptoms of spasm in the stomach, and that without any apparent cause. She had taken a little arrow-root, prepared with water, and had slept for several hours, when she was suddenly awakened by excruciating pain in the region of the stomach. She struck this part with her hand, pressed upon it with all her force, and complained of great difficulty of breathing. The pulse was small and rapid, the skin cold and moist, and the countenance of a deadly paleness. Two draughts, containing full doses of laudanum, ether, and volatile tincture of valerian, were exhibited without effect; sinapisms, prepared with turpentine, were applied to the stomach and inferior extremities; and, about half an hour before death, when the powers of life were rapidly sinking, brandy was freely given. On dissection, the only morbid appearance that could be discovered, by the most accurate investigation, was general softening of the cerebellum, with *vascular turgescence in the base of the brain*."

The pain of stomach in this case was evidently symptomatic, and, as it would appear, altogether the result of organic cerebral disease; but mere irritation of the same parts, we have reason to believe, may produce similar effects. The probability of the occurrence of cramp of stomach, after delivery, might in fact be always inferred, where there is great tenderness of the upper cervical, and

\* From the tables given at the close, one would be rather led to believe that the sickness of stomach depended on the cervical irritation—the pain on the dorsal. In thirty cases of the former, there was pain of stomach in only two. In forty-six of the latter, it was present in thirty-four.



seventh or eighth dorsal vertebra, especially in persons of hysterical habits, or extreme nervous susceptibility. Tenderness in those situations, however, more commonly occasions, for some time previous to delivery, a sensation of burning at the epigastrium, generally with pain shooting from the back to the sternum, especially when the seventh or eighth dorsal vertebra is pressed on. It is often premonitory of those tormenting, and what have been called anomalous, forms of hysteria, which delivery in such cases usually ushers in, and might, at the least, lead one to anticipate untoward symptoms in the confinement, and a tedious recovery after it.

The next is a case in which, like Howard's (xxx1), there was pain of stomach, but no tenderness of the dorsal vertebræ.

XXXV. Joan Bryan, aged thirty-five years, was attacked, about a week since, with vomiting and pain of stomach; sometimes occurring in violent fits, like cramp, and *accompanied by troublesome cough*. There was some whiteness of tongue, and the bowels were free. On examination of the spine, tenderness of the second and third cervical vertebra was discovered. The patient recovered under the usual treatment.

The following is a well-marked case, in which, although the eighth pair was obviously the chief seat of irritation, the pain and tenderness of stomach seemed dependent on an affection of the seventh or eighth dorsal, and the cramp-like pains, or colic (which were below the stomach), on an affection of the lowermost dorsal nerves.

XXXVI. Margaret Shaugnessy, aged twenty years, complained of pain at the pit of the stomach and oppression, with frequent pains in the bowels, attacking her like colic. There was a great deal of general weakness, nervousness, and loss of appetite; the pulse was quick and small, and the tongue whitish. Pressure on the lowermost dorsal vertebræ excited the colic pains at the umbilicus; on the seventh, at the pit of the stomach; on the upper dorsal, it occasioned a feeling of oppression, but not pain; on the lowest cervical it excited a suffocating sensation at the tra-

chea, where it emerges from the chest; and higher up still, it gave a sensation of a lump and choking at the larynx, like the globus hystericus.

Many cases of hysteria, more complex than the foregoing, seem to depend altogether on alternate irritation at the trunk of the fifth and eighth pairs, or of either of these, and some of the dorsal and lumbar nerves. They are frequent in our periodicals, and sometimes occasion much surmise and discussion as to their nature and origin. We shall give a few in illustration from our note-book, to show their connection with tenderness of the spine, and one from the *Journal Générale*, of January, 1829, treated by M. RENE PRUS, and entitled "A Case of Neuralgia of the Par Vagus, imitating Hysteria."

XXXVII. Judith Ryan, aged thirty-eight years, a nurse, after an operation performed on one of the eyelids, for the cure of entropion, was attacked with nervous lowness and sinking. On particular inquiry, it appeared she was frequently affected in this way before. The sinkings are always preceded by a burning sensation shooting from the back to the pit of the stomach, and followed by perspiration and debility. Has frequent pain at the middle of the back, with a burning feel at the sides. Is often attacked with dysury; gets sudden distressing headaches, with a rushing of blood and throbbing of the vessels of the neck and temples. Her mind sometimes wanders, and her recollection is imperfect; scarcely knows what is going on about her. Is often oppressed, and at times waked up at night, with a sense of suffocation at the throat, and hoarse breathing, "*like a child's in the quinsy*." Has frequent pain in the left side, but no cough. Complains much of languor and loss of appetite.

It was inferred from these symptoms, that tenderness of spine would be discovered at some of the cervical vertebræ, at the seventh or eighth dorsal, and at the lumbar. On examination, there was found extreme tenderness of the middle cervical. When her attention was directed to it by the pressure, she said that she always felt great pain and soreness of all the back of the neck, whenever she became

affected with the croupy breathing, so that she could scarcely bear to have the muscles touched for some days. There was no tenderness on touching the middle dorsal, but it occasioned a great sense of oppression, a suffocating feel; and at the upper lumbar, pressure excited pain, both in the spot pressed on, and at the affected part of the side.

The most remarkable feature in this case was the occurrence of croupy breathing as a symptom of irritation of the cervical spine, to which we have before called the reader's attention. The attack of dysury is very common where the lumbar spine is affected. We may observe, that the burning sensation at the pit of the stomach, already adverted to, was present, although there does not appear to have been tenderness at the seventh or eighth dorsal vertebra. The patient gradually recovered under the use of mild aperients, with tonics and nervines, and occasional counter-irritation at various points of the spine.

XXXVIII. Catherine Hogan, aged nineteen, complained of pain at the right side *and pit of the stomach, with cough and dyspnœa*; gets fits of lowness and crying, and was often attacked with the globus hystericus and sense of sudden suffocation. The pain sometimes extended across the stomach to the left side, and was felt at the extremity of the clavicle and between the shoulders; complained of pain and numbness down the arms, generally moderate and bearable, but occasionally shooting down to the wrists with excruciating suddenness, and remaining for some hours. The left arm was more frequently affected than the right; and the pain, when acute there, was often suddenly transferred to the left jaw, exciting intense toothach. She was frequently affected with sickness of stomach and faintness, and now and then with violent fits resembling colic. These affections alternated with one another in an unaccountable and almost whimsical manner, so that the poor girl found a difficulty even in stating her complaint. "She could never tell," she said, "where her disease was; for it was more changeable than the wind." Her tongue was clean, but the pulse was quick, and she complained of thirst. The

catamenia was suppressed, to which she attributed all her sufferings. Her illness commenced with a fit of painful menstruation.

This patient's recovery was tedious. The case, like many of that class, might be supposed, in some degree, to have worn itself out, as it was five or six months before she attained her former health. Though medicine seemed to possess little influence in arresting or subduing the complaint, it was of material benefit in alleviating the troublesome symptoms, and restricting the mischief which they were likely to occasion. Considerable intervals of relief, and sometimes perfect intermissions, were evidently attributable to the treatment. It consisted chiefly of small, repeated blisters to the spine, with moderate bleedings, accompanied by remedies directed to the improvement of the digestive functions, and a restoration of strength and tone to the system. The blisters seldom gave more than temporary relief. Bloodletting, which (from the small, rapid, hysterical pulse, and general appearance of debility) was not resorted to until the close of the complaint, when every thing else had failed, proved very useful, particularly, she thought, when performed on the foot—a fair evidence of the truth of Mr. BURN'S observation, that complaints should be treated by the indications they present, rather than by inductions from a name; and that, where there is much affection of the respiratory organs from any cause, abstraction of blood is often advantageous.

XXXIX. Catherine Keating, aged twenty-seven years, complains of pain at the middle of the sternum, with distressing oppression, fluttering at the heart, and great debility. Is seized, two or three times a week, with fits of insensibility, followed by shiverings and cold perspiration. These fits usually commence with sickness of stomach, and a sense of something rising to the throat: she then loses her sight and senses. She is always obliged to creep about with the utmost caution; as the slightest bend or motion, an inadvertent step, or a pebble coming accidentally beneath the foot in walking, brings on pain at the sternum, which shoots to the back, and thence down her limbs, and



is followed by a sense of faintness. There is great tenderness of the third and seventh cervical, and of the seventh dorsal vertebra.

The progress of this disease cannot be given, as the patient did not continue in attendance at the Dispensary; but the connection between the hysterical affection and the state of the cord seems well marked. In these cases the attention is often directed to the neck by stiffness and pain of the muscles, as in the following.

XL. Bridget Keefe, aged seventeen years, was seized, a week since, with sickness of stomach, headach, heaviness, and giddiness, so that she was in danger of falling if she stooped. She had also cough and oppression, with some degree of feverishness. Her vision was imperfect; every thing about the room seemed misty and yellow, as if something was continually between her and the object she looked at; and she had frequent fits of lowness, with apprehension of dying. Two days since, she was attacked with pain or cramp in the back of the neck, "as if her neck was breaking," which subsided in the course of some hours; she was subsequently affected with pain in the right side and pit of the stomach. As in most hysterical cases, her feelings of illness were very variable. There was tenderness of the upper cervical vertebræ, of the scalp, especially at the crown of the head, and of the eighth dorsal, at the right side. The girl recovered perfectly in a few days, under the use of purgatives, which is very common in recent cases. These are, indeed, very usually occasioned by some derangement in the digestive organs.

In the case given by M. RENE PRUS (which we quote from DR. JOHNSON'S Review), the symptoms were so striking, that their dependence on some affection of the fifth or eighth pair could not possibly escape so well-informed an observer. It may, however, excite some surprise, that the connection of a case so incontestably hysterical with irritation of these nerves, should not have suggested the possibility of its frequent existence in similar complaints, rather than the unsatisfactory inference, that neuralgia might so imitate

hysteria, or hysteria so resemble neuralgia, as to occasion confusion with respect to both. We venture to assert that it was like most other cases of hysteria, but a form of spinal or ganglionic irritation, and that, if an examination had been instituted, tenderness of the cervical and lower lumbar vertebræ would have been detected. This we think the strong analogy which it presents to cases already cited must sufficiently establish, but it shall be further illustrated as we proceed.

XLI. Rosina, a femme de chambre, aged thirty years, had been brought up in damp and low apartments, and had suffered severely from rheumatism at the early age of twelve years. At the age of sixteen, she was so much frightened at the approach of the enemy's troops to the capital, that she was seized with the most excruciating pains in the epigastrium, which came on in paroxysms, with intervals of ease. They were often accompanied with vomiting, and by the sensation of a solid body rising from the stomach into the throat. The paroxysms sometimes ended spontaneously by a copious flow of tears. Frequently, when the epigastric pains disappeared, the patient was tormented with pain in the dental or orbital branches of the fifth pair of nerves, but these were almost always confined to one side of the face. For these complaints, which were considered as hysterical, various remedies were employed, without any success. Such was the history given by the patient when she consulted M. Prus, fourteen years after the commencement of her sufferings. She said she did not mind the facial pains, but those in the stomach were intolerable, and rendered her life miserable. M. Prus considered the original cause as a moral one, that is, a violent mental emotion, and the phenomena of the epigastric pains, vomiting, and the globus, induced him to look on the affection as one of the recurrent branches of the eighth pair. The intermissions and the paroxysms suggested the idea of neuralgia, which was strengthened by the pain shifting from the par vagum to the fifth pair, and vice versâ. At the time of application, the pains were confined to the stomach, and oc-

curred between the hours of three and half-past seven P. M. The sulphate of quinine was prescribed during the intermissions, and in five days the pains ceased.

The patient considered herself radically cured, and was in high spirits; but, on the twenty-second day afterwards, the most insufferable pain occurred in the course of the infra-orbital nerve. A sinapism was applied to the arm of the same side, soon after which the pain quitted the face, and seated itself in the cubital nerve of the arm sinapised. This was of momentary duration, and an interval of fifteen days of ease succeeded, when the facial pains recurred with great violence. A blister was now applied beneath each trochanter, with a view of driving the neuralgia to as great a distance as possible from its usual seat. The sciatic nerves of the right side became violently painful, and completely prevented the patient from walking. Three blisters, with intervals of two days between each, were applied along the course of the nerve. The pain then suddenly shifted to the left sciatic nerve, and flying blisters were again applied, with the effect of removing the pain. From this time (the middle of February, 1828), the patient remained free from all pain, and from all the symptoms of an hysterical character before described.

As a considerable portion of the nervous influence of the eighth pair is distributed to the heart and lungs, difficulty of respiration, cough, irregularity of pulse, disposition to syncope, and other affections of those organs, necessarily arise from their disorder, either as distinct complaints, or as complications with those of the stomach, of which we have said so much. These, however, we shall treat of in common with other affections of the vascular and respiratory systems, dependent on irritation of a similar portion of the spinal cord.

The phrenic nerve, like the eighth, is subject to frequent disorder in these hysterical or spinal affections. M. Jolly, and other French writers, seem to look upon it as sometimes the seat of pain. As, however, this appears to be yet more debateable than the same opinion respecting the pneumogastric, we shall regard it simply as a motor nerve,

and consider its disorders with those of the muscular system.

Affections of the sensorium, declaring themselves not by pain but disturbance of the intellect, are frequent concomitants if not dependents on irritation of the cervical cord. It is possible that in these instances delirium should not so much be considered an actual disorder of the intellectual organs, as an excited or disturbed state of the nerves that supply them with common sensation, or of some part of the medulla oblongata or fourth ventricle, in which such sensation originates: such a conjecture might offer some explanation of the frequency of delirium in diseases of the spinal cord, and, indeed, in all very acute complaints. We have however here to do only with the fact, that tenderness of some of the cervical vertebræ may be always found in disorders of the sensorium occurring in nervous or susceptible habits, and, in such cases, frequently originates in very trivial irritation. We recollect to have seen a young girl once, screaming in the most appalling fright, that there was a great gap in her neck, and that her head was falling off. Her terrified friends were about her, endeavouring to convince her of the absurdity of her apprehensions. This, however, only served to make her grasp her head more firmly between her hands, and double her cries for assistance. By much intimidation, and by dashing cold water over her person, she was after some time forced to swallow a dose of castor oil, and, as soon as it operated, was perfectly relieved from her hallucination. We have no notes of cases precisely of this kind, but may offer the following, which seems to be of severer character than common, probably from long neglect.

XLII. Mary Enright, aged twenty-three years, is often seized with sudden blindness and giddiness, which in a short time pass off, but leave her with confused and disordered intellect. She describes herself as not knowing what she is doing, and saying all sorts of foolish things. This state lasts eight or ten days, after which she perfectly recovers her reason. The general health appears pretty good, and the catamenia regular. There is extreme tenderness



of the second cervical, and of the seventh or eighth dorsal vertebra: the pain in the last spot originated about nine months since, in consequence of a fall when carrying a can of water. This case, which bears a remarkable resemblance to the extraordinary one related above, was benefited by bleeding and purgatives; but is recent at the dispensary, and yet under treatment.

Many cases of ocular spectra, or illusions, seem also to belong to disorders of the cervical medulla; at least, if the spinal tenderness be admitted as any evidence of it. An instance occurred to us some years since, where a young girl was haunted by a spectral figure, which she described as standing by her bedside. She was frequently seized with fits of screaming, as she fancied it approached her, and kept her relatives in the greatest state of alarm and astonishment. A few active purgatives gave immediate and effectual relief. We shall only cite one case of a more recent date, presenting some singular features.

XLIII. Michael Nash, aged thirty-six, of a good constitution, but very intemperate habits, was for some days complaining of occasional pains in the stomach and arch of the colon, with costiveness, loss of appetite, and general nervous excitement. He had constant slight pain in the brow, with disturbance of vision, and extreme sensibility to noise, and all other impressions on the senses. His eyes were suffused; his tongue white; his pulse full, at about ninety; and he had flitting pain in his chest, with occasional oppressions and great anxiety. His chief distress, however, arose from visions, with which he was very continually troubled. Figures of persons, almost all of whom were wholly unknown to him, were frequently before him, sometimes so plain and distinct, that, although his reason assured him they were mere illusions, he could scarcely avoid believing they had an absolute existence. They were not always the same, nor always present, but went and came, renewing his anxiety and irritation of mind as often as they appeared. On examining the spine, tenderness was found at the three upper cervical vertebræ, pressure on any of them exciting the pain, with great suddenness, at the brow. The eighth,

ninth, and tenth dorsal were excessively tender, the slightest pressure on any of them occasioning an exceedingly distressing sensation to shoot suddenly upward along the spine to the neck and brow, and downwards to the lower trunk and extremities. It was not pain, but a horrid feeling pervading the whole frame; and it was only by the greatest entreaty that he could be induced to permit a repetition of the examination. The sensibility had now so much increased, that a mere touch was sufficient to renew these distressing sensations. A pint of blood was taken from the arm. During the operation the visions returned: he said he saw three women standing behind the gentleman who was bleeding him. Being asked, were they as large as life, he replied that "they were rather low," and pointed to the place where they stood. It was inquired "Had he ever seen them before?" "No." "Were they speaking to each other?" "No." "What were they doing?" "They were usually minding their business, but sometimes stopped to watch him, and kept their eyes fixed on his for some moments." The sense of feeling was quite as illusive as that of sight; for in a few moments after he called out "that somebody had hit him on the back." All this was very different from the usual raving in mania, as he scarce felt the impression before he was himself aware of its illusion. In fact, the chief distress seemed to be from the imposing nature of the perception, when he knew it was impossible it could have had an object. "Get me rid of these sights and sounds," was his entreaty, "and get me some sleep, or I shall lose my senses."

Active purgatives were made use of after the bleeding, and a blister was applied over the ninth dorsal, which was of great service. He soon recovered under the continued use of gentle aperients, combined with bitters.

He had a recurrence of the attack some months after, in consequence of hard drinking; but though he complained more of the head, especially at the back of it, there was no material fulness or frequency of the pulse, or febrile irritation. He was relieved by purgatives and blistering, and was afterwards treated with camphor and other nervines.

Illusive affections of hearing, smell, and taste, are not perhaps so common as those of sight: they are yet found in frequent connection with that acute sensitiveness of the whole nervous system which usually prevails in severe instances of spinal irritation. A lady, whose case we shall have hereafter to relate, was sometimes startled by distinct loud screams from one of her children, and could only be convinced of her illusion by sending to the hall, or the distant room from whence the sound seemed to come. This extreme sensitiveness appeared to be always connected with increased tenderness of the upper cervical portion of the cord.

We now come to speak of cases of much greater frequency and importance, in which stupor, and sometimes coma, are induced. These have been usually attributed to affections of the brain, of which, indeed, they are sometimes the result, but we shall have it in our power to show not by any means frequently. We have before said it is impossible, in complaints rarely terminating fatally, to bring post-mortem or absolute evidence of their exact seat. We can only offer general reasoning, the extraordinary concurrence and resemblance of symptoms in those cases we consider as functional disorders, with those recorded as having existed in the organic structure of the same parts, the physiological probability, the success of particular treatment, and inferences from strictly analogous cases. Considerations of this kind, however individually unimportant, are strong and conclusive when corroborating one another; but we shall insist on them at more advantage towards the conclusion of these papers.

XLIV. Margaret Fitzgerald, aged fourteen, a girl of sanguine habit, complained of slight headach and heaviness for some time, but did not seem otherwise unwell. Her countenance had usually an appearance of being flushed, and the eyes looked dull. One day, while reading, she fell suddenly upon the floor in a state of insensibility, but was not convulsed, and recovered very soon. She had three attacks of this kind within a short period of one another.

before any medical treatment was instituted. Never had the catamenia.

On examination, great tenderness was discovered at the third cervical vertebra. Some blood was taken from the arm, and purgatives administered, which prevented the attack for a period of three months. On its recurrence, the same remedies were resorted to; but in eight or ten weeks there was a return of the fit. A blister to the tender vertebral bone was now ordered, and it was directed that it should be repeated in a few days, if the slightest soreness remained, or if at any time a recurrence of it was detected.

Nearly a year has now elapsed, and by a strict adherence to this plan she has never since had a fit. There have more than once been strong indications of its approach, in the appearance of the countenance, and a return of the tenderness in the neck; but purgatives and blisters always prevented the attack.

XLV. Mary Cangney, aged eleven years, was for some days accustomed to fall down in a fit, in which she lay for some time, with flushed face, speechless, and almost insensible, generally from one to four hours. They came on sometimes two or three times a day. The tongue was white; the pulse natural, at ninety; she occasionally felt pain in the bowels and head, sometimes a little preceding the fit. The pain in the head was instantly brought on by pressure on the cervical vertebræ, particularly the second and third. The sixth, seventh, eighth, and ninth dorsal were also tender to the touch; pressure on the third, fourth, or fifth dorsal, sent a shooting pain up the neck and over the brow, which was felt as if passing within the canal of the medulla spinalis.

In this instance purgatives were made use of for seven or eight days, with little effect. The fits became less frequent, but still continued to recur. Six ounces of blood were then taken from the arm, and a blister ordered to the nape of the neck. So much relief was derived from the bleeding, that the girl neglected to apply the blister, and continued well and free from the fits, until the beginning



of June (about six weeks afterwards), when they again recurred with precisely similar symptoms. The abstraction of blood being now repeated, and followed by the application of a blister, the attack was arrested as before, and has not since returned.

XLVI. Nancy O'Brien, aged thirty-five years. Is frequently attacked with a feeling of numbness in her fingers, which gradually extends up the hand to the mouth, and through the jaws and tongue, preventing her from speaking. She is then seized with sickness of stomach and headach, and when this last is severe, with fits of insensibility. There is tenderness of the first, second, and third cervical vertebræ: *pressure on the second, brings on the sickness of stomach and headach.* Catamenia regular: bowels free. She was successfully treated by purgatives and blisters to the neck.

These cases are of exceeding interest, if only as illustrations of apparently formidable diseases yielding so instantaneously to the treatment. We may venture to infer from them, as well as from numerous others, how much more frequently even affections of the senses are the result of disturbed function than of organic mischief. These fits are frequently, as in the latter case, interrupted or cured by abstraction of blood. Whether this acts by relieving congestion in the spinal vessels, as many have supposed, or by quieting nervous irritation, we must not now stay to inquire. The attack is too frequently mistaken, especially in children, for a serious affection of the head; but is almost invariably at first symptomatic of some distant irritation, as of dentition, disordered stomach or bowels, or of a peculiar state of the uterine system; to which probably it was to be attributed in one of the foregoing instances. It is continually met with in all those spinal or hysteric cases in which the cord is affected to any extent; and though usually, and perhaps necessarily, connected with a deranged state of the cervical medulla, it seems sometimes to occur when the lower portions are more severely engaged; even so low as the middle lumbar. It is often attended by pallor and universal coldness of the surface, with depressed circulation, and is then mistaken for syncope, which in fact it closely

resembles; but much more frequently it is accompanied by flushing of the cheeks and brow, with throbbing of the carotid and temporal arteries, and burning heat in the hands and forehead. We have never seen it occasion stertorous breathing; but, when it terminates fatally, it may possibly do so. In short, it seems to be a less intense state of that obscure nervous or vascular derangement to which Dr. Abercrombie refers cases of simple apoplexy. It may, however, end in death without exhibiting any such symptoms, as it sometimes seems to do in young children; in women with spinal affections subsequent to delivery; and we may perhaps say, in those singular instances in which typhoid patients die suddenly in their convalescence.

Cases of this description occur occasionally in the slightest as well as in the most severe instances of spinal irritation, and are not commonly dangerous in either, unless altogether neglected or mistreated. We have seen a patient remain ten or twelve days in a state of insensibility, only differing from apoplexy in the quiet, almost imperceptible, breathing, and the greater mobility of the iris; and from syncope, in the distinct, full pulse, the temperature of the skin, and the natural expression of countenance. This is very like what has been called trance, but not bearing so perfect a resemblance to death as that state is sometimes said to do. It is not uncommon, however, to see a child so affected during dentition, that it is with difficulty distinguished from one that is recently dead. The subject of fits affecting infants is one of extreme interest, if only from their frequent occurrence, but still more so from the great and sudden danger with which they are often attended. This fortunately depends not so much on the violence of the exciting cause, as upon the extraordinary sensibility and irritability of fibre which exist at that tender age. About their proximate cause there has been some discussion; and very lately a paper has appeared in one of our periodicals, from an American physician, who attributes them in all instances to spasm affecting the intestines. This spasm, he conceives, may be induced by disordered stomach and bowels, the common result of the irritation and feverishness

of dentition, or of flatulence or acidity arising from improper food. The fit of insensibility or convulsion is thus invariably regarded as a sympathetic effect of the spasm. One would suppose no doubt could be entertained, that worms, flatulence, and acidity, by irritating the intestinal tube, may, whether exciting spasm or not, induce a sympathetic action in the sensorium; but, in the cases originating in dentition, which are by much the most numerous, it will appear obvious that the fit is excited in a more direct way, the irritation at the extremity of the maxillary branch of the fifth pair inducing a peculiar affection at the base of the encephalon or medulla oblongata; which in its turn occasions either disorder or severe spasm of the stomach, or the state of insensibility or convulsion, or both, as we have seen it continually does in severe instances of spinal irritation in adults. It is necessary to dwell a little on this point, as, if our opinion is correct, it may influence materially the views of treatment. No fact seems clearer to us than that those cases in which the sensorium is affected in dentition, through the medium of the bowels, are by no means the most frequent; that the disturbance of the bowel is itself commonly an effect of spinal irritation; and that even where it is the medium by which the inflamed gums act, it is by no mysterious sympathy between them and the brain, but usually by bringing on that peculiar state of the medullary cord, of which so much has been already said. It is unsatisfactory that this state cannot be ascertained by examination of the spine, as in grown persons. Children are apt to cry at very slight pressure, when perhaps there is no soreness at all; and yet it does not appear to us that an attentive observer would often be deceived in the expression of the countenance. The sharp, quick wincing of the features, when acute pain is felt, is very different from their slow gathering up in mere peevishness. The following case seems strikingly to support the foregoing opinions.

XLVII. An infant of six or eight months' old, apparently in good health, but suffering at times from teething, became restless in the nurse's arms, and was seized with

sudden paleness. He had slight quivering and blueness about the lips, the eyes turned upwards, and he lay back still and insensible, as in syncope or death. He was recovered by the warm bath; his gums were freely lanced, and the bowels were strictly attended to. He had, however, a recurrence of the fit every six or seven days, sometimes to a prolonged and alarming degree. The state of the spine now excited attention; and as the child seemed to evince strong indications of pain on slight pressure at the upper cervical, a blister was applied there. The fit did not return for a fortnight, and then in a slighter degree than usual. The blister was consequently repeated, and another laid behind each ear as soon as it healed. After this, three weeks elapsed before there was a recurrence of the attack. It was at length determined to keep some part of the back of the neck constantly in a state of irritation; and as long as this plan was adhered to, the child continued perfectly well. All apprehension on the subject ceased after some weeks, and the soreness behind the ears having been unadvisedly allowed to heal up, the little patient was once more seized with the fits, while asleep in the cradle, to a more violent degree than ever, and recurring two or three times in the course of one night: recourse was instantly had to the remedy which had already proved so successful; and from this time until the irritation of dentition had entirely subsided, a slight discharge was constantly kept up, either behind the ears or at the back of the neck. The child never had a return of the attack afterwards.

However deeply impressed with a conviction that fallacies in medical reasoning often originate in inferences drawn from single cases, we cannot but observe, that here the treatment originated in conclusive deductions from strictly analogous affections, and that no remedy directed simply either to the bowels or the teeth, or the nervous system generally, was of any avail. It was the strong similitude observed between those attacks in infants, and the fits of insensibility and convulsions occurring in girls of hysterical habits, known to depend on spinal irritation, that first led to our attributing them to a like cause. Women, possessing



greater sensibility of the nervous system than men, are much more liable to violent affections of it from very trivial causes, whether mental or corporeal; which accounts for the fact, that functional disorders of the spinal cord (nervous diseases) are esteemed almost peculiar to them. Infants have, as has been already observed, the same exquisite texture and susceptibility to slight impressions; and we should therefore naturally expect would be subject to the same complaints.

Fits of insensibility are frequently brought on by slight pressure at the affected vertebra; a convincing proof of their dependence on the state of the medulla spinalis. We shall have to state cases, when speaking of general irritation of the cord, in which patients tumbled suddenly forward, perfectly insensible, on pressing at a particular point of the spine. Fits of syncope are occasionally brought on in the same way, as might have probably occurred in Case XX, of the young gentleman whose vision was so singularly affected, had the pressure been continued or repeated. Indeed, as we have before mentioned, it is sometimes extremely difficult to distinguish between fits of insensibility in which the heart and arterial system are only secondarily affected, and fits of syncope in which they are directly depressed. Of these last, we shall next proceed to speak.

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## SECTION II.

### *Affections of the Vascular System connected with Cervical Irritation.*

The effects of mental emotion on the heart and arteries—the irregular, or violent, or preternaturally weak, or suspended action which they induce, through the medium of the spinal cord—might have led to the knowledge of a new train of symptoms dependent on irritation. As these are affections of the involuntary muscles, the power of which is supposed to depend on the ganglionic nerves, we were, in

our earlier attention to the subject, much perplexed what to attribute to diseased states of the ganglia, and what to the cord. Assuming, from Dr. Philip's experiments, "that the heart is not only as easily stimulated through the brain and spinal marrow as the muscles of voluntary motion are, but that it may be stimulated through them in the newly-dead animal for a considerable time after these muscles can no longer be influenced in this way; proving, that the ganglions oppose no obstacle to the influence of the brain and spinal marrow being extended to the muscles of involuntary motion;" we saw no difficulty in concluding that disturbed states of the spinal marrow may produce such affections. We felt, however, that it was highly probable they might equally result from diseased ganglia, and even be accompanied by the tenderness of the corresponding portion of the medulla. However, as our knowledge of the functions of the sympathetic and its ganglions is as yet too obscure to permit any certain inferences, it eventually seemed most prudent to assume as affections of the cord all such as were attended by spinal tenderness, and to give to the ganglia those which evinced no such symptoms. The danger of erroneous conclusions was thus at least limited. There could be no doubt of the influence of the cord on the involuntary muscles, nor that this influence might be excited by irritation of certain portions of it; while it seemed altogether a gratuitous supposition that spinal tenderness is ever induced by diseases of the ganglia. It may be quite true that it is so, but we do not seem to have any proof of it.

We are the more anxious to insist on this point, because it is a matter of no small importance to have any mode of distinguishing between affections of these nervous masses and those of the cord; and in a treatise on this subject which has just come into our hands, written by Mr. Teale, of Leeds, it is freely assumed, that affections of all parts, whose functions are chiefly dependent on the sympathetic, are the result of disease in the ganglia of that nerve. It seems needless to repeat what Dr. Wilson Philip has so fully explained, that although the stomach, intestines, &c.

are wholly dependent upon the ganglionic system for the exercise of their functions, they are strictly subject to the influence of the brain and spinal marrow; and we are hence at a loss to conceive why the spinal tenderness should be mentioned by Mr. Teale as an argument for ganglionic disease, when the most obvious conclusion would be that it indicated an affection of the cord. It seems difficult to explain, too, why, in some cases exhibiting intense symptoms of ganglionic disease, this tenderness should be wholly absent. It may indeed be said, with great truth, that many instances of spinal disease occur, in which the tenderness is very limited, and nowise proportioned to the symptoms. Of such it is only fair to admit a strong probability, that the ganglia are the true seat of the disease\*.

It appeared from Dr. Philip's experiments, that to produce any powerful effect on the heart and blood-vessels, it was necessary to stimulate a large portion of the brain and spinal marrow. The same fact is observable in the diseases of irritation; as most severe cases of palpitation, syncope, &c. not occasioned by organic disease, are marked by universal tenderness of the spine. We have, nevertheless, often met with these symptoms connected with tenderness of minute points, especially of the cervical portion; and whether this be owing to a peculiar sensation occasioned at the tender part, and acting on the whole cord, or, in the latter case, to an affection of the pneumo-gastric nerves, which have so considerable a share in forming the cardiac, or, finally, to an affection of the cervical ganglia, it is difficult to determine. For illustrations on this subject, instead of extracts from our note-book, we might perhaps refer with more advantage to an essay by Dr. Darwall, of Birmingham, of which we have only been fortunate enough to see an interesting notice. Nothing can be more accurate than his delineations of these affections. We shall only venture to offer two or three cases, commencing with one resulting

\* We shall have occasion to speak of them more particularly in another part of this work, to which we beg to direct the attention of our readers.

from irritation produced in the cervical cord by an injury of the external ear.

XLVIII. James Casey, a smith, had part of his ear bitten off in a quarrel. The inflammation and soreness were so great, that he could not sit up in bed; and, though a strong man, generally fainted when the sore was dressing. This did not excite much surprise at first, as it was attributed to the tenderness of the wound in a peculiarly sensitive habit; but when it began to heal, and all extraordinary soreness had worn away, it seemed very remarkable that he should still continue subject to sudden sinkings or lownesses, closely approaching to syncope. There appeared an extravagant disproportion between the apparent debility or nervous depression, and the trifling nature of the wound. When the lowness came on, he was always terrified by the apprehension of dying, and was obliged instantly to have recourse to wine and stimulants for relief; which, as he had no thirst nor heat of skin, were not forbidden. From the resemblance which these fits bore to the sinkings which are sometimes observed, in hysterical habits, in females after delivery, irritation of the cervical portion of the spinal marrow was suspected. On examination, there was found very great tenderness at the third and fourth cervical vertebræ, particularly acute at the right side. As the wound was now healed, and the disposition to fainting was much less frequent, it was thought unnecessary to institute any local treatment: attention to the bowels, and the volatile tincture of valerian, with camphor mixture, completed the cure.

XLIX. Mrs. —, a lady aged forty-eight, was awoke in the night by a sensation of weight and constriction across the chest; pain at the ensiform cartilage, and violent palpitation, followed by fits of sinking or fainting, with apprehension of dying. The palpitation was always brought on to a distressing degree, when she chanced to turn on her left side. These symptoms continued to recur for some days, but were very much relieved by mild purgatives and antispasmodics: she was, however, now seized with acute pains in the neck, arms, chest, and sides; and, on examination,



there was found tenderness of the first and second cervical vertebræ, and of the seventh or eighth dorsal. All these symptoms readily disappeared, on the application of a blister to the latter place; and her usual health was restored by a continuation of the antispasmodics, with tonics. The attack seemed to have originated in fright and mental anxiety, and was readily reinduced, though in a slighter degree, by any new distress, for several months afterwards.

Although we suppose, in these cases, that the primary disease exists in the cord, the ganglia are necessarily implicated. It is on them, and through them, the spinal irritation exerts its influence; and we may have the upper or lower ganglia affected, according as the irritation shifts its place in the spine. As an instance of this, we have been, within these few days, sent for by the lady whose case is just detailed, and found her labouring under a new train of symptoms. She had been seized, two or three times during the last week, with a sudden rush of blood to the head, which seemed to commence at the clavicles, and pass up in the course of the carotids. There was a momentary faintness, or tendency to insensibility, with loss of power of the arms; and she complained of occasional pain at the crown of the head and brow, sometimes occurring suddenly, and attended by stiffness and tenderness of the muscles at the back of the neck, especially at the right side: she had also slight cough, and an internal soreness of the chest, which she compared to the sensation experienced when a blister is taken off. She has had also a return of the palpitations at night. There can be no doubt of these symptoms yielding to the usual treatment.

L. James Hanly, aged twenty-eight years, a labourer, about six months since, after severe labour in drawing loads of manure on his back, felt pain between the shoulders and in the back of the head, with continual drowsiness; could not keep himself awake, and sometimes fell into a state of insensibility, in which he usually lay for some minutes. This was especially apt to occur to him in bed, coming over him, as he expressed it, "like a dream." He had a continual disposition to yawn and stretch himself, which some-

times induced him to hang by the arms from a branch of a tree; but this always brought on the pain between the shoulders and at the back of the head. He lost all appetite, and was frequently attacked with racking pain or cramp in the stomach and sides. He gave up eating in the evening, as he invariably found that it brought on the pain. After some weeks, the headach became more distressing, and he began to be attacked by palpitations, which were soon constant and very troublesome, accompanied by tremblings or shiverings, and by universal throbbing of the arteries. He felt pulses, he said, in every part of his body. The palpitation often occurred in sudden paroxysms; the heart beating as if it would burst the walls of the chest. It frequently extended to the descending aorta, and was felt most distressing at the back. When attacked in this way, he was always obliged to spring from the bed, and walk about the room, until the throbbing abated. In its greatest violence, it was sometimes accompanied by pain or uneasiness in the cardiac region, which passed suddenly to the throat and head, and left him in a state of insensibility. After some months had elapsed, the headach became so distressing, and the pain of the stomach so severe, that it was found necessary to take blood largely twice from the temporal artery within a short period. From this, considerable benefit was derived; but the palpitations still continued, often waking him up at night, and terminating in a protracted fit of insensibility, somewhat like syncope, except in the flushing and heat of the face and brow. These usually commenced with general shivering, followed by pain between the shoulders, profuse perspiration, palpitation, and insensibility. He attributed his illness to lifting heavy loads, but thought it might possibly have some connection with a fracture of the skull which he had received four years since. He was, however, in good health from the time he received the injury until within the last half-year, when his present illness commenced.

The treatment consisted of the bleedings already mentioned; the constant use of the tartarized antimonial ointment to the spine; the compound aloetic and assafoetida

pill, with volatile alkali in camphor mixture; and one or two blisters to the back of the neck. There was a perfect recovery in three or four weeks. The spinal tenderness, which was extremely acute in all the cervical and in the seventh and eighth dorsal vertebræ, gradually declining in proportion to the amendment in the more distressing symptoms of the complaint.

In the cases already detailed, especially in our first, it will be recollected that many or all of these symptoms were present; and we shall find them forming a link in the chain of morbid phenomena in almost every severe one which we may have to offer as we proceed. It is necessary again to call the reader's attention to the spinal tenderness which, from its almost invariable presence in such cases as occurred to us, we believe may be found in the very earliest stages of many of those dreadful fits of palpitation; angina, syncope, &c. dependent on dyspepsia and hysteria. It can matter little, whether it be characteristic of a primary affection, created we know not how, or of one originating in the mental, the digestive, or generative organs, if it is capable of becoming independent, and reacting on the system. The only question of importance appears to be, is it occasionally or ever induced by organic disease of the heart or large vessels? or is it not rather the precursor of these?

The former point we have had but few opportunities of ascertaining; but Mr. Teale\* states that he has met with some instances of it. We have nevertheless strong grounds for believing, that, in the majority of cases, functional disorder of the circulation, and its attendant spinal tenderness, precedes change of structure. The well-known observation of Corvisart, that palpitations and structural affections of the heart increased much during the dreadful period of the French revolution, may be mentioned in illustration of this; as we must suppose the passions of the mind can only act, in the first instance, on the functions of parts. We have already observed, that spinal tenderness does not accompany inflammatory, and we believe it may be said organic,

\* Teale on Neuralgic Diseases.

disease in general; and if we could offer it as a certain diagnosis in these as in other affections, it would be very satisfactory: but this would be deducing more from it than, in such obscure complaints, any one character can ever possibly give, and, at all events, must be left to the determination of more extensive observation. It seems much, if its presence materially assists in the diagnosis; and we can conceive cases in which it may decidedly pronounce it, even where the stethoscope, with the most practised ear, has failed.

It may seem, perhaps, extravagant or paradoxical to suppose that functional disorder could imitate the physical signs of organic change; and yet this we are far from thinking impossible\*. Cases have occurred to us, in which there appeared to be the utmost moral certainty of organic disease; and which, notwithstanding, got completely well, in the course of some months or years, without having been materially benefited by any medical treatment. Dr. Abercrombie relates some such; two of which, if we may reason from the treatment and result, originated in a gouty or rheumatic diathesis. It is not improbable that spinal tenderness would have been found in all of them. Similar ones are related by Cullen and Mason Good; and there can be little doubt but the singular affection of which the late Dr. Bateman eventually died was of this description.

With cases of violent, or irregular, or depressed action of the heart, may be considered similar affections of the arterial system, which will very generally be found to depend on that morbid condition, of a greater or less extent of the cord, called irritation. Preternatural throbbing of the temporal and carotid arteries will usually be found connected with cervical tenderness, while the pulsations of the aorta in the epigastric region are more probably referable to irritation of the upper dorsal. We speak in this qualified way, because, in all the cases we have met with, there ex-

\* Laennec, who ought to be excellent authority on this subject, asserts, that, in functional disturbance of the heart, the stethoscopic signs attendant on organic affections may sometimes be detected, and instances especially the *bruit de soufflet*.



isted tenderness of the whole or the greater part of the spine. Before functional disorders of the cord became a subject of investigation with us, we were often much alarmed and perplexed by these epigastric pulsations; and, in cases presenting many marks of an exquisitely nervous diathesis, were imperfectly contented to assume, with Dr. Baillie, Hunter, and others, that they were not dependent on organic disease; but we now have, it is hoped, in the spinal tenderness, a certain diagnostic, by which apprehension may be at once allayed. Even if it be true that it sometimes is to be met with in aneurism of the aorta, the latter we suspect would not, for a length of time, give rise to those peculiar nervous symptoms indicative of spinal irritation, which may always be detected at the very earliest period of that affection. A more perplexing case may be imagined in pure disorder of the ganglionic system, on the supposition that it does not occasion spinal tenderness; for here we should have the violent palpitation, as in aneurism, without any mark of affection of the cord. But it is to be recollected, that the great sympathetic connects and combines so many parts, by the intimate interweaving of its numerous threads, that no one portion of it could be seriously affected without inducing general disturbance of the abdominal or thoracic viscera. In any case of an hysterical or nervous character, palpitation from ganglionic irritation could not exist with symptoms so few and uncomplicated, and so analogous to what we might associate with physical effects, as those arising from aneurism.

Instances of these affections of the arteries may be found as occasional symptoms, in almost every severe case of spinal irritation which we shall have occasion to quote.

Perhaps no fitter opportunity may occur, to offer a few words relative to the disease called *angina pectoris*, which we have had every reason, with M. Laennec, to regard as a neuralgic affection, and, as far as our experience has gone, connected with spinal tenderness; we can scarcely say yet, whether of the cervical or dorsal portions, or of both. In its slighter degrees it is a very common affection in nervous habits, as will be evident from many of the cases given in

these papers. It was long a distressing complaint, and existing in a very intense form in the first case which we have narrated. We shall here only offer one illustration, but of so decided a character that it cannot, we think, leave a shadow of doubt on the mind as to the occasional dependence of this formidable affection on mere nervous disturbance.

LI. A lady, aged forty-five, was suffering with violent headach, affecting especially the brow and forehead, and attended by violent throbbing of the temporal arteries, flushed face, and feverishness. The pain of head was dreadful at times, and usually much worse at the right than at the left side. She has been subject to it for years, though seldom to such a degree as at present, and generally gets some relief by going to bed. The attack comes on in rather a singular manner: her vision first seems suddenly dim or troubled, or the half of any object she looks at disappears. If her eyes are fixed on the window, the glass appears to move like water flowing in sunshine; or, if engaged in reading, one half of the letters seem wanting. This is an infallible precursor of the pain; and, as soon as it occurs, she gives up whatever employment engages her at the moment, and prepares to meet it. Her stomach soon becomes sick, and this is followed by the violent pain in the head, which continues an uncertain period, from a few hours to three or four days. Her right eye is usually affected first, but eventually both. Her general health appears good; her habit inclines to fulness. She was very ill some years since, with constant palpitation and nervous catchings or startings when in bed; oppression; pain in the chest, arms, neck, and stomach. Organic disease of the heart was suspected at the time by her medical attendant: but another physician who was consulted, treated it entirely as a hysterical affection, and she recovered under the use of mild aperients and nervines. As there was some fulness of pulse, with feverishness and excessive action of the temporal arteries, leeches were in this instance applied to the temples, which, with active purgatives, removed the attack. No examination of the cervical portion of the spine was made.

About twelve months after, we were called up in the night to this lady, who said she was dying. It appeared, that, some hours after retiring to rest, she was suddenly awakened by violent palpitation, with a shooting pain in the region of the heart, extending from thence down the shoulder and arm: she started out of her sleep, pale and terrified, and felt as if she was about to die; but in a short time the pain lessened, and the palpitation began to subside. On arriving at the house, she appeared much relieved; but a feeling of languor and apprehension remained. As our attention was at this time beginning to be directed to functional affections of the cord, the cervical vertebræ were examined, but no tenderness was detected. The dorsal were not examined at all. She was treated with aperients, camphor, and other antispasmodics; but the palpitation continued to recur for several nights, though in a much less degree. As it subsided, she began to complain greatly of the back of the neck: the muscles were so sore that she could not bear the gentlest friction, nor could she turn her head or stoop without pain: there was also pain round the throat, and down either shoulder: she had uneasiness in the neck when this attack first came on, but her terror at the palpitation prevented her attending to it. She said, when examined, that the pressure was not made low enough. There was now excessive tenderness of the lowest cervical vertebra. It did not still occur to us to examine the dorsal, as we connected the symptoms in our minds exclusively with irritation of the cervical or pneumogastric nerves.

In the following summer, we were again summoned at midnight to visit this lady. She was awakened out of her sleep, as on a former occasion, with a sudden fit of violent oppression, in which she thought she would have died: her breathing was shrill and stridulous, threatening imminent suffocation, exactly as in the worst cases of spasmodic croup. The paroxysm was over on our arrival; but a croupy wheezing respiration remained, and she was in much apprehension of a return of the attack. There was extreme tenderness of the first, sixth, and seventh cervical vertebræ. She speedily recovered from this distressing affection; but,

after another interval of some months, was seized with pains in the hip, knee, and ankle, which came on in paroxysms of intense severity, darting down the limbs, and attacking the joints severely: there was superficial soreness of the muscles, but no increased heat, and little general feverishness. This last disorder (a true neuralgia) was readily relieved; but as, on her recovery, the patient is always unwilling to persevere in attention to the spine, or follow up any regular plan of prevention, there is no doubt but she will hereafter become the subject of some new symptom; perhaps of comatose fits, or syncope, or a recurrence of any of the old attacks.

Laennec observes of angina pectoris, "that the character of the symptoms confirm, by analogy, the correctness of the opinion respecting its neuralgic character; since we know the neuralgias of the most unequivocal kind—for example, the sciatica and tic douloureux—give rise to the same variety and species of effects as it does; namely, acute pain, painful torpor, simple numbness along the track of the nerve, and sometimes spasm or subinflammatory swelling of the parts to which it is distributed."

But in the case here cited, we have still less disputable evidence. We have an attack of angina occurring, as one among a successive train of affections, all violent while they lasted, differing essentially from one another in their apparent seats and characters, yet obviously depending upon the same constitutional cause, and unconnected with organic disease. Mr. Teale has given some interesting cases further confirmatory of these views.

In concluding this short notice of affections of the circulating system, we may offer one observation. Previous to the time of Corvisart, those resulting from organic lesion were little understood, and believed to be very uncommon. The most obvious cases were treated as nervous disorders. The study of morbid anatomy at length produced a total change in medical opinion; and it soon became a universally-received notion, that most or all of them were connected with absolute physical alterations in the organs affected. As a consequence of this, numerous patients who



were suffering from dyspepsia, gout, or rheumatism, were put under the severest discipline, and thrown into a miserable state of dejection, by pronouncing their cases organic. Frequent error has now led us to tread back our steps; and we would only beg to remind our readers, that the stronger the necessity would seem for doing so, the greater must be the risk of our again, like the older physicians, overlooking organic diseases. We know that those called nervous or symptomatic are infinitely the most numerous; but we are also fully impressed with the conviction, that instances of altered structure are not of rare occurrence.

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### SECTION III.

#### *Affections of the Respiratory System connected with Cervical Irritation.*

There are no parts of the human frame so easily excited, or so sensitive to the existence of irritation, as the respiratory system, by which we would be understood to mean all those parts or organs whose actions are usually associated in the act of breathing, and not any assumption with respect to Sir C. Bell's theory. This extreme excitability accounts for its derangement, to a greater or lesser degree, in the diseases of almost every organ of the body, and renders it more incumbent on us to understand clearly the symptoms which may be referred to mere disturbance of function.

The most frequent symptom of irritation of the cervical and upper dorsal portion of the spinal cord, is cough; and if there was no other fact to prove the importance of more strict inquiry into the effects of disturbed influence of nerves, than the manner in which this has been wholly overlooked by our best medical writers, it would be sufficient. It occurs in very many forms, and connected with a vast variety of symptoms: sometimes it is hard, dry, and constant, or it comes on at certain hours in the day in vio-

lent convulsive paroxysms, with or without fever; and, in either of these characters, it will generally be found accompanying gastric and liver affections, and sometimes uterine or dental irritation, or that produced by intestinal worms: it occasionally occurs like common cold, accompanied by slight oppression; and it is in this form it appears in the general run of spinal cases, but is seldom, as in the foregoing, attended by expectoration. Lastly, it may be met with, slight, short, and little troublesome, just as it occurs in tubercular phthisis, and often in connection with such symptoms as lead to the supposition of the existence of that fatal disease.

Spinal tenderness may be found in all these cases; and, as has been so often stated, may keep up the symptoms after the cause in which it originated has been removed. Mr. Burns seems to apprehend, that, in young females, if the spinal affection is overlooked or neglected, consumption may be induced. That irritation at the trunk of the respiratory nerves may induce tubercular inflammation as readily as when acting on their minute fibrillæ, in the bronchial membrane, there can be no possible doubt; but this can only be admitted with respect to cases in which a phthisical diathesis prevails. Numerous instances have occurred to us, in which most harassing cough was kept up for months, and even years, by irritation of the cervical portion of the medulla, without inducing any more formidable disease. One case only we recollect to have terminated in fatal consumption; but this was very protracted; and all our entreaties could not induce the patient to persevere in attention to the upper part of the spine, although the most marked benefit, and at one time an interruption of the disorder for months, was procured by repeated blistering: she could not be persuaded that remedies applied to the neck were of avail for what she conceived an affection of the lungs. Indeed it seems very probable, that, in many cases of hereditary phthisis, the disorder commences in this way, and might often be prevented by vigilant attention. Cough may always be excited in these irritations by pressure on the tender vertebræ, and sometimes convulsive fits, or hard

barking occurs, from any unusual action of the diaphragm, or accidental excitement of the mucous membrane of the lungs. Thus, a sudden fit of laughter, or of crying, may bring on coughing for hours, or it may be occasioned by a stimulant vapour, or by mere mental excitement.

LII. A young lady, aged seventeen, of delicate frame, light-coloured hair, and peculiarly fair skin, was attacked with cold; which left a short, slight cough behind it, not very troublesome, but occurring frequently in the day, and accompanied by slight oppression. The oppression was greatly increased on ascending the stairs, and there was then some palpitation. The cheek was always coloured with a pink spot, beautifully defined and bright, especially in the morning. The pulse was quick and readily excited, usually 100 in a minute; the tongue was whitish towards the middle and back part, and the papillæ elevated; she had tenderness at the lower part of the sternum, and often pain there on deep inspiration, and complained of general languor and weakness. There was tenderness of all the cervical, and of the four upper dorsal vertebræ; pressure on any one of which instantly brought on coughing.

The treatment in this instance consisted in the application of ten leeches, and long narrow blisters, often repeated, to the tender part of the spine. Minute alterative doses of the blue pill were also given, and a mixture composed of *infus. rosæ*, with Epsom salts and tincture of *digitalis*. The most evident amendment followed the blistering. In proportion as the spinal tenderness abated, the pulmonic affection gave way, and she was quite well in a fortnight or three weeks, although the attack had existed for a considerable time previous.

We shall, in contrast with the foregoing, give the case of a young lady of the same age, in which the spinal affection was of a much severer and more obstinate character, and which yet suggested little apprehension as to the result, from the evident antiphthisical character of her conformation. In the former, one could not but be alarmed as to the possible result; while in that which we are about to relate, and in which there was beyond all measure more of com-

plaint and suffering, no person of experience could hesitate in predicting a favourable termination.

LIII. A lady, aged seventeen years, became affected with pain in the right side, great tenderness on pressure, sickness of stomach, and feverishness. The two last symptoms were removed by purgatives; but the pain continued, varying its situation slightly from beneath the left breast to the margin of the ribs, and occasionally as low as the crista of the ileum; sometimes it changed altogether to the left side, or affected both at the same time, and was very soon attended by nervous lowness and oppression, with other hysterical symptoms. She was attacked also by continued headach and sickness of stomach, and eventually by dry, loud, harsh cough, pain and soreness of chest, frequent chilliness and inclination to shivering, with a feeling of languor and debility. There was some furring of the tongue in the morning; the appetite was bad, and the pulse frequent and irritable, usually 120 in a minute. The catamenia was regular. On examination of the spine, great tenderness of the second cervical was discovered; pressure there occasioning acute pain in the vertex and brow; pressure on the lower cervical and upper dorsal excited pain there, and loud coughing; at the seventh or eighth, the same symptom, with pain of chest; and at the four last dorsal, as well as at the margin of the ribs, as far forward as the ensiform cartilage, there was extreme pain on pressure.

Leeches and repeated blistering at the tender points of the vertebral column were employed, with great temporary relief; but, when the severity of the symptoms abated at one part, it increased at another, as if there had been rather a transference than an actual removal of irritation. Thus, she sometimes complained most of the head and stomach; sometimes of the distressing cough, pain of chest, and oppression; sometimes of the back and sides. A considerable amendment took place during the use of mild purgatives, followed by tonics; and the cough seemed at last to yield to the sulphate of quinine.

All the symptoms recurred, however, in an aggravated



form, a few weeks afterwards, in consequence of some uneasiness of mind: the cough grew more distressing, the pain in the right side, which had never wholly left her, became worse, and the catamenia appeared every three weeks. A mild mercurial course was now resorted to, not so much from a conviction that the symptoms originated in an affection of liver, as that we had reason to attach some value to its use in pure cases of spinal irritation. She had not been rubbing the mercurial ointment a fortnight, when the cough completely subsided, although resisting every other remedy for so long a period; and the general health gradually improved. Occasional blistering was still made use of with advantage, and the side was covered with a belladonna plaster.

There was once again a recurrence of the symptoms, after an interval of four or five weeks, but they were of a mild character, and yielded, as in the first instance, to purgatives and tonics, with small doses of opium, and to stimulating liniments applied to the spine. This last remedy was of such obvious advantage, that she declared it did her more good than all that were made use of from the commencement. Her recovery was perfect.

The hard, barking cough, which Dr. Clarke describes as affecting young females, and which yields to sudden effusion of cold water after foiling every other remedy, was, we should suppose, a mere symptom of spinal irritation. Tenderness of the vertebræ would have been discovered, had any examination been made: nor, indeed, can we imagine a disorder of any other nature likely to be so suddenly and so perfectly relieved. The cough remaining after the acute stage of hooping-cough is over, which is said to depend upon habit, is also perhaps dependent on an irritable state of the cord\*. Since the conjecture occurred to us, however, we

\* The tussis spasmodica, which Underwood describes as affecting infants, remaining dry and hoarse under the use of pectoral remedies, but soon relieved by opiates or cicuta, is evidently of this nature. Perhaps the same may be inferred of the cough described by Dr. Gregory, of London, as dependent on an irritable state of the mucous

have met with no instance to confirm it. In typhoid, inflammatory, and still more frequently in intermittent fevers, cough is often a symptom of nervous disorder, and especially disorder of the upper part of the spinal cord. It is the more necessary for the practitioner to have this continually impressed on his mind, as from its connection in these cases with high febrile excitement, it may very readily lead him to imagine he has to contend with local inflammation.

Next in frequency to cough, and usually accompanying it, is oppression; which may occur, in all its degrees, from slight dyspnoea up to the most terrific asthmatic paroxysm, as the irritation may chance to be more or less intense, or affect one set of nerves or another. When the superior or external respiratory are engaged, we have uneasy breathing, and a feeling of atmospherical pressure, not perceptible while the healthy relation subsists between it and the muscular power. This is most distinctly experienced by persons slightly affected with hemiplegia: they have a sense of weight or pressure, and of obstruction to the free expansion of the lungs on the paralytic side. When the phrenic is affected, we have a sense of oppression, a difficulty of expiration, and laborious action of the external respiratory muscles. When the par vagum suffers, either the muscular coats of the minute bronchial tubes are affected, as in pure spasmodic asthma, or the nervous influence (the secreting power of the lungs, by which a change is produced in the blood) is interrupted, as in the nervous; and in both a distressing sense of suffocation is experienced. When the functional disturbance is confined to the superior laryngeal or the recurrenents, we have spasmodic action of the oblique and transverse arytenoid muscles, or loss of voice, or hoarseness, or wheezing, or croupy breathing; which last is perhaps owing to some change in the state of the mucous secretions.

The first species of oppression is, in its slighter degrees, membrane, which he describes as not benefited by any remedies which he has been able to devise, except change of air.

a very frequent one, and is usually present in those instances in which patients complain of a load on the chest. It shall be more particularly noticed, as well as the affection of the phrenic, in subsequent cases, where it formed a prominent symptom. The fact, that, in many persons, the asthmatic paroxysm depends solely upon disturbance of the nervous influence, is a necessary pathological inference, adopting, as we do, our views of functional disorder as general with respect to the nervous system \*; and it is to this description of cases, perhaps solely, that galvanism, as suggested by Dr. W. Philip, is applicable. Of the advantages resulting from a very slight modification of the usual treatment, many instances have occurred to us.

LIV. A young lady of an asthmatic constitution, and whose habit was so susceptible that town air or a close room instantly occasioned dyspnœa with piping respiration, caught a severe cold, and was in consequence attacked with a violent paroxysm, attended with considerable fever. She was found with purple cheeks and lips, supported in the bed by pillows; the chest heaving; the muscles of respiration tense and labouring; the pulse was 120, small and compressible. On examination, slight tenderness was discovered at the two or three upper cervical vertebræ. Together with other remedies usual in asthmatic cases, a blister was applied to the neck, much to the surprise of the patient, who had been always before blistered on the chest. Perfect relief to all the symptoms, but especially the oppression, was obtained; and the paroxysm on the next night was scarcely observable.

In a few weeks afterwards, she had a return of the fit in a more violent degree, and applied two large blisters in succession to the chest, at her own counsel, without the slightest benefit. Her medical attendant was now sent for, and found her, if possible, in a much worse state than on the former occasion. A blister was again applied to the neck,

\* We feel particular pleasure in referring to a very interesting chapter in the work of Laennec, on nervous and spasmodic asthma. It places the question of the dependence of a class of asthmatic cases on mere nervous disturbance beyond all disputation.

and a mild diaphoretic mixture, with hyosciamus, ordered. Though not effecting so complete a resolution of the paroxysm as in the former instance, it produced a surprising mitigation of the disorder. The young lady and her friends were particularly struck with the obvious relief which the remedy procured.

It must be evident that leeching, blistering, or friction with liniments at the origin of the nerves, can only be of use in the special instance of nervous disturbance; and perhaps we might say, generally, only where spinal tenderness is to be met with. The following are cases of irritation, where the oppression and cough were merely symptomatic of the general affection.

LV. Kate C—, aged fifty-six, was ill three weeks with violent oppression, which usually seized her at night, after retiring to bed, and obliged her to sit up. It always commenced by a sensation as if cold water trickled down the crown of the head; and then palpitation of the heart supervened, with violent orthoponœa, and a feeling as if she was about to die. The fit, after continuing from half an hour to an hour, terminated by general perspiration and debility. She had no cough or expectoration, and the oppression was seldom distressing until night. There was great tenderness of all the cervical vertebræ, and of the five or six upper dorsal. Pressure at the sixth occasioned pain under the right breast.

LVI. Ann Fitzgerald, aged thirty, a nurse, complained of hard, dry cough, with oppression; pain in the right eye and brow, aggravated much on coughing; general soreness of the scalp; pulse natural, tongue whitish. Her illness followed a severe cold, attended by inflamed tonsils and pain of chest. On examination, there was found great tenderness of all the cervical, and the sixth or seventh dorsal vertebræ.

LVII. Catherine M'Mahon, aged fifty, complained of pain in the head, followed by a pustular eruption. The right side of the head was first affected, and afterwards the left in the same way. She had pain in the cardiac region, increased on inspiration, and attended by hard cough and



oppression; the stomach was dyspeptic, and there was occasional vomiting. She felt no pain in the back, except on examination. Pressure at the first and second cervical vertebræ excited pain in the brow; at the eighth or ninth dorsal, severely in the stomach, with tendency to syncope; pressure at the last cervical or upper dorsal brought on the coughing, and took away her breath.

LVIII. Bridget Connel, aged forty-five, complained of pain and soreness at the pit of the stomach and right side, beneath the margin of the ribs, increased severely by pressure on the eighth dorsal vertebra; had fluttering at the heart, with great debility, and almost constant dyspnœa; obliged to sit up in the bed at night, in consequence of the oppression. Had pain across the brows and general soreness of the scalp, with thirst and loss of appetite; tongue little furred. Pressure behind the mastoid process brought on the pain at the brow, and there was considerable tenderness of the lower cervical vertebræ.

All these cases recovered. We have thought it unnecessary to occupy the reader's time with the treatment, as it is a subject upon which we shall hereafter dwell more particularly. It was necessarily modified by the variation in the symptoms, but was, through all of them, governed by the state of the spinal cord. Much as the symptoms seemed sometimes to indicate inflammatory action, bleeding was never resorted to, except with the view of allaying irritation, or relieving congestion, and then but to a small extent. It is remarkable how very often the stomach, and sometimes the liver, seem to be engaged in these cases, as in XXX and XXXI. When it is recollected that these viscera are supplied by the same nerve which is distributed to the lungs, there seems little occasion to refer the connection to any general sympathy, and we find a ready explanation of the fact adverted to by many medical writers, of the frequency with which the asthmatic paroxysm is occasioned by disordered stomach.

A very important fact, ascertained by Magendie and Desmoulins, is the constant correspondence between the action of the posterior portion of the fourth ventricle and the

eighth pair of nerves. It is to this, perhaps, we are to refer the oppression and general affection of the respiratory system, which, in the commencement of apoplectic or paralytic attacks, we have sometimes seen mistaken for symptoms of hydrothorax. To this also we may attribute the occurrence of that very common affection, spasmodic croup, and one which has been said equally to resemble croup, described by Drs. Hamilton and Clarke, and which to us appears but a variety of the former.

That spasmodic croup is in most instances dependent either on irritation at the origin of the eighth pair, or at some part of the fourth ventricle, we need scarcely offer further proof than the frequency of its recurrence as a symptom of spinal irritation in adults. It is mentioned as one of that long train of affections under which the lady, whose case is first detailed in these papers, suffered, and shall be often noticed in others similarly complicated, as we proceed. It occurs sometimes like acute croup, with wheezing, as if from phlegm in the trachea, and stridulous respiration; sometimes with a peculiar crowing inspiration, as in the convulsive attack first described by Dr. Hamilton, of which we shall have to speak presently; and in these cases it is often combined with difficulty of swallowing, strongly marking its cerebral or spinal dependence. It is sometimes accompanied by feverishness, especially in children, in which case it is apt to be mistaken for true inflammatory croup; and it is generally induced by distant irritations, as teething or disordered bowels, or the accession of measles in certain unfavourable states of the atmosphere.

Three cases of this affection, occurring within a few days on the accession of measles, lately occurred to us, which sufficiently establish the foregoing views. In one, bleeding and vomiting was made use of, with immediate and perfect relief. As it was the first which occurred, and measles was not suspected at the time, it was supposed to be a case of true inflammatory croup. The occurrence of measles, however, on the next day, suggested its dependence on irritation: and the second little patient, who was quite as seriously attacked, was left to the warm bath, the action of an emetic,

and calomel, which gave relief in the course of a few hours. In the third case, nothing was done, through some neglect on the part of the mother ; but the child was nevertheless relieved in the morning by the eruption of the measles. What yet further proves the nature of these affections is, that, in the second case, after the infant had struggled through a severe and protracted disease, there was a recurrence of the croup, in as violent a degree as before. It was relieved by the same remedies, by blistering the neck, and by antispasmodics, and the child, though extremely exhausted, seemed likely to recover. It then, however, fell into frequent dozing ; its eyelids were unclosed while asleep, and it was continually sawing the air with whichever arm chanced to lie out unconfined by the bedclothes. There was occasional grinding of the teeth, and other symptoms of an affection of the brain ; the skin and feet were cold, and the face pallid. He remained in this state for a day or two, fell into convulsions, and died. There was no croupy breathing for the last few days. It would appear very probable that all these symptoms were rather the effect of exhaustion than of organic disease of the brain ; but there was no examination permitted.

In so freely assuming the existence of spasmodic croup as a distinct disease from the inflammatory, it may perhaps be necessary to offer some remarks on the opinion of one who is justly esteemed of very high authority on this subject, Dr. Cheyne. He asserts that he has not been able to see any just grounds for considering that there are two kinds of croup, and that, from the identity of symptoms in what have been called the spurious and the inflammatory, he conceives them to be but varieties of the same complaint.

The pathological principles on which all our reasonings respecting functional disorders are founded, would, we think, without any reference to the immediate cases under consideration, lead to very opposite inferences : the functions of every organ in the body may be disturbed, as we have often insisted on, in three different ways ; by inflammation immediately affecting any particular one, by irritation of the capillary extremities of the nerves distributed to it, and by

irritation at the trunk or origin of these nerves; yet so like shall be the disturbance, so similar the symptoms in each of these cases, that sometimes no trace of distinction can be detected. Thus, ischuria may be occasioned by inflammation at the neck of the bladder, by the irritation of a stone within it, by irritation of the spinal cord at the origin of the lumbar nerves. Pain of the stomach or bowels may be occasioned by inflammation, by irritants acting on the minute nervous fibrils, or by irritation of the cord at the origin of some of the dorsal nerves; and in these latter cases the symptoms occasioned by mere irritation may be attended with heat of skin and quickness of pulse, as in the inflammatory. From all fair analogy, therefore, we must believe that the trachea may be affected with inflammation (the inflammatory croup of authors), with irritation, as from mephitic and irritating vapours acting immediately on the parts; and with irritation of the cord affecting the origins of the cervical and pneumogastric nerves: and that in all these the symptoms shall be precisely alike, as far as regards disturbance of function: they shall all be cases of croup, though arising from such different causes. So clear do these inferences appear to us, that, if the spurious or spasmodic croup were at this moment an unknown disease, we should unhesitatingly predict the probability of its occurrence\*.

In our early practice we chanced to meet with many cases of inflammatory croup, and had just reason to acknowledge

\* Little as the attention of the medical world seems to have been directed to the law just referred to, proofs of its universality are to be found in the history of the diseases of every organ of the human frame. Thus, as we have spurious croup, a mimic of the inflammatory, we have an affection of the larynx presenting a likeness of laryngitis, or of ulcerated larynx. Dr. G. Gregory mentions (*Elements of the Theory and Practice of Physic*), that, "in the progress of consumption, particularly towards its latter stages, it is not unusual to find a violent pain come on, referred to the larynx, and attended generally with hoarseness. From the violence of the pain, it might be supposed owing to inflammation; but leeches and blisters are of no service, and it generally goes off in four or five days. It is probably a symptomatic pain, connected perhaps with the recurrent nerve."



its fatality, when not actively treated within the first twelve hours. With this experience, it surprised us not a little to hear respectable practitioners sometimes assert that they had few or no fatal cases, and that, at almost any period of the disease, they were able to effect cures with the very remedies which with us were totally unavailing. In the course of time, however, instances of croup fell in our own way, which, though presenting few, and often no distinctive marks from the former, terminated favourably under the mildest treatment, and occasionally without any treatment at all. As it seemed very inconclusive reasoning to say these diseases differed only in degree, when they both presented symptoms equally violent, or when, in fact, that which was sure to end favourably was sometimes the more intense of the two, we at once concluded, that, although attacking the same parts, and therefore almost necessarily inducing the same symptoms, they differed altogether in their nature. Dr. Kellie agrees with his friend, Dr. Cheyne, in the opinion, that, except in the circumstance of intermission, and continuance, and more or less violence of disease, there is not any real or essential difference. But is not, we may ask, regular intermission in itself a wide mark of distinction? Who would speak of intermittent and continued inflammation of any other organ of the body? Who would infer that hysteralgia and hysteritis, or spasm of the stomach and gastritis, which frequently differ only as to intermission or continuance, were but varieties of the same complaint? And surely, after all, we have the obvious fact before us, that in the very worst attacks of the one, even when neglected, patients most frequently recover; while in the mildest of the other, under the same circumstances, they almost invariably die. It might be said we should offer post-mortem evidence in favour of these opinions; but opportunities for examination after death in such cases are rare, and cannot occur with great frequency even in the long experience of the profession at large. It seems, indeed, hardly just to demand proofs from appearances in the dead body, in diseases of irritation, which are seldom fatal, as we should in those of a more dangerous nature.

Dr. Cheyne says, that, "until the advocates for the separate existence of spasmodic croup more fully assign and establish their grounds of belief, he is convinced it will be for the benefit of the patient that we should act as if there was but one kind." As the well-earned reputation of so eminent and experienced a practitioner necessarily gives great weight to any opinions he may offer, and as we feel the great importance of the distinction we have been contending for, as regards the treatment, at least in the progress of such cases\*, we shall state shortly our reasons for

\* To enumerate the dangers likely to result from assuming an identity of diseases which have many relations with one another, and yet totally differ in their nature, would seem to be quite superfluous. Perhaps it may be mentioned as not among the least, the great risk, as in cases of painful tumour of the mammæ, of subjecting patients unnecessarily to distressing operations. A case of difficult respiration occurred in the Royal Infirmary of Edinburgh some months since, apparently spasmodic, in which a surgeon of eminence resorted to the operation of tracheotomy. It was that of Elizabeth Rattray, aged thirty-two, reported in the Medical Gazette for August 22, 1829. If we may venture to judge from a short statement, we should say this was a pure case of spinal irritation; and that the palpitation, hoarseness, and difficult breathing were referrible to disordered function of the cord, from its superior part, including the origin of the pneumo-gastric nerves, to the sixth or seventh dorsal vertebra. Had an examination been made, tenderness would have been found all along this track. the cure of which might perhaps have relieved all the distressing symptoms. That there was no chronic disease going on in the larynx or trachea, is evident from the absence of painful cough and fever, and, above all, from the relief obtained by the artificial opening. and the rapidity with which the wound was permitted to heal up. No organic disease, which had been coming on for three months, could have been benefited by the operation, or improved so much in a few days as to make it advisable to remove the tube. On the other hand, if it was looked upon as altogether a spasmodic attack, what was the value of an operation capable of affording relief only while the wound was kept open, and which, so long as the original cause remained, gave no security against a return of the oppression? We venture to assert, if the state of this patient since she left the hospital be inquired after, it will be found she has had a recurrence of the disorder, unless she has since been under medical treatment. It cannot be contended the danger of suffocation was so imminent, that, in any view, tracheotomy was requisite, as spasmodic affections of the larynx must be regarded in the same light

inferring the existence of spasmodic croup as a distinct complaint, and offer new replies to some queries on the subject, which Dr. Cheyne proposes to his friend, Dr. Kellie.

1. From analogy with the diseases of other organs, we may infer, that affections of the nerves supplying the larynx and trachea must closely resemble organic affections of those parts; and we necessarily suppose the nerves are sometimes the subject of disorder.

2. We can, by an effort of the will, imitate almost all the respiratory phenomena of croup.

3. We find certain cases of croup intermit suddenly, often leaving the patient perfectly free from complaint until the recurrence of the fit; a phenomenon wholly irreconcilable with the known character of inflammation.

4. We find intense cases of intermittent croup occurring as symptoms, in diseases which we know are dependent upon an irritable or morbid state of the nervous system.

5. We know no distinctions of violent or mild between inflammatory and spasmodic croup, as regards symptoms: they are usually, at their onset, equally distressing, and sometimes the spasmodic is the more alarming or violent of the two. The result bears no relation to the intensity of the symptoms, and must therefore have reference altogether to some difference in the nature of the attack.

6. One is often relieved by antispasmodic remedies, the other scarcely ever; one seldom requires blood-letting, the other almost always; one is sometimes spontaneously cured, the other never.

The following are the questions proposed by Dr. Cheyne to Dr. Kellie.

1. Does this (Case I, in Dr. Cheyne's Treatise) appear to you to have been a case of spasmodic croup?

It seems merely necessary to answer in the affirmative; as, from observations already made, the distinctions between it and the inflammatory must be sufficiently obvious.

with a somewhat similar one of the bronchial tubes in the asthmatic paroxysm; in which, however terrific the difficulty of respiration, absolute suffocation is scarcely ever known to occur.



2. Have you ever known spasmodic croup brought on by cold?

Frequently. In fact, diseases dependent upon disturbance or irritation of the nervous system are as readily brought on by cold as by any other cause. Spasmodic croup is in this respect precisely like spasmodic or nervous asthma, fits of which we have sometimes seen excited by cold, sometimes by disordered stomach, fatigue, or dissipation. We cannot tell why the nerves supplying the larynx or trachea should be simply disturbed in these cases by cold, any more than we can why the supra-orbital or facial branches of the fifth become affected with pain from the same cause, when inflammation would appear to be its most natural result in both.

3. Have you known the same child, at different times, affected with spasmodic, and inflammatory or genuine croup?

Though we cannot immediately call to mind any such instances, we entertain no doubt of its occasional occurrence. Affections of nerves, when obstinate, sometimes lead to inflammation. Spasm of the stomach, if unrelieved, may end in gastritis; colic in enteritis; hystericalgia in inflammation of the uterus. It must be remarked, however, that habits peculiarly disposed to spasmodic attacks, as the hysteric and nervous, seem much less liable to genuine inflammation than other constitutions. This is so generally true, that even when the appearances of local inflammation are present in hysterical or nervous persons, there is strong ground for suspecting the attack is (to adopt the usual phrase) only simulated\*. Although admitting the occasional supervention of inflammatory croup with patients labouring under the spasmodic, analogy would therefore lead us to infer that it is not a very usual occurrence; and that a child who had once been attacked with spasmodic croup was much less liable to an attack of inflammatory, we will not say than if he never had any disorder of the air passages,

\* Dr. Marshall Hall makes many interesting remarks upon this important subject. "On some Diseases of Females," chap. vi.



but than if he had once before been affected with the last-named disease. In our own experience, we have found children affected with spasmodic croup very liable to a recurrence of it; much more so than those once attacked by the inflammatory are to a return of the inflammation. As it has been said the inflammation of croup, and its result, the production of a false membrane, are peculiar, and totally unlike common inflammation of any other or even of the same parts, it may perhaps be a question whether, admitting that spasmodic croup sometimes runs into the inflammatory, this is the species of inflammation that would be induced; or whether it might not rather be common laryngeal, or tracheal, or bronchial inflammation?

4. Have you ever observed spasmodic and genuine croup in the same family?

5. Do you recollect to have seen any case which you considered as spasmodic croup, pass into the genuine?

6. Did you ever, in spasmodic croup, observe difficult breathing continue after the immediate effect of the fit of croupy coughing was over?

The observations above may serve equally well as replies to the fourth and fifth questions. To the sixth we may offer Dr. Kellie's answer, that we have seen a degree of dyspnoea and short wheezing respiration in the interval of the fits.

7. Were the difficult breathing to continue, do you think it would be safe, in the cure, to trust to calomel alone?

If the difficult respiration continued, accompanied by febrile heat, we should say it was unsafe to trust to any one remedy. There is in many diseases the greatest difficulty in ascertaining whether an attack is dependent on inflammation or on nervous disturbance; and this difficulty is yet greater in croup, as it is chiefly a disease of children, in whom it is not easy to ascertain the existence of spinal tenderness. It is therefore incumbent on us, when any doubt is felt, to treat the case as inflammatory; and fortunately, in the early stages, the same remedies apply almost equally well to both. It is chiefly in the progress of spasmodic croup that mischief may be done by bleeding and depletion;

and it will always sufficiently declare itself, before these can be carried to a hazardous extent. We cannot agree with Dr. Mason Good, that, in the spurious attack, blood-letting, by increasing the nervous irritability, is always injurious: it does so only when employed largely, or, in weak habits, or repeatedly. When cautiously done, and in small quantity, we have sometimes known it allay the irritability of the system more speedily than other remedies.

8. Did you ever attend a case of spasmodic croup which terminated fatally?

Though we do not recollect ever to have seen a fatal case of spasmodic or spurious croup, we are quite convinced the disease sometimes terminates fatally. When spasm of the sphincter can prevent the flow of water from the bladder for hours, sometimes until it bursts, need we wonder that spasm of the glottis should occasionally persist until the patient is suffocated? Were examinations universally made in fatal cases of croup, we venture to predict we should soon have evidence of this termination in the absence of the false membrane.

We have only to remark, in conclusion, that there appears to be no resemblance between spasmodic croup and asthma, which could admit of their being mistaken for a moment. However croupy the respiration in asthma—and we have sometimes heard it intensely so—the patient himself is always aware, and, if old enough, will tell, that the difficulty is in the chest, and not in the throat. We must also agree with Dr. Kellie in the opinion, that there never exists any inflammatory action of the pulmonary organs in spasmodic croup, at least at its outset; the febrile action accompanying its accession is almost invariably dependent on nervous irritation.

We shall now speak of an affection usually attacking infants, which may be considered as a species of the spasmodic croup.

This attack is seldom attended by wheezing or croupy respiration, as if it was simply an affection of certain motor nerves constricting the larynx. Dr. Hamilton, jun. of Edinburgh, treats of it among convulsive disorders of children;

and describes it as a convulsive stricture of the upper part of the windpipe, characterized by a peculiar crowing sound, quite momentary, generally happening on the child's awakening from sleep, or on taking food, or when teased or irritated. Dr. J. Clarke describes it more minutely, as characterized "by distinct attempts to fill the chest, between each of which a squeaking noise is often made; the eyes stare, and the child is evidently in great distress; the face and extremities, if the paroxysm continues long, become purple; the head is thrown backward, and the spine often bent as in opisthotonos: at length a strong expiration takes place, a fit of crying generally succeeds, and the child, evidently much exhausted, often falls asleep. Sometimes, but not frequently, in one of these attacks, the infant dies."

The treatment recommended by Dr. Hamilton consists in attention to the state of the child's gums, keeping the bowels free, and applying stimulating liniments or blisters to the throat and chest: but viewing the respiratory affection, whatever its remote cause may be, as directly dependent on irritation at the origin of the eighth pair of nerves, it would seem that more advantage might be derived by directing our remedies to this point. Leeches and counter-irritation at the neck, followed by antispasmodics, or, if there was no febrile heat, by minute doses of some of the metallic oxydes, would, we have little doubt, in most instances, interrupt the attack. In short, there appears to be no reason to treat it differently from similar affections in the adult depending on spinal irritation; but that in childhood, in which an extreme delicacy of organization prevails, it should constantly be held in mind that the diseases of irritation are always more serious, and more apt to be attended with danger, than in advanced life.

Dr. J. Clarke believes that this, and indeed all other convulsive affections of children, depend upon some organic affection of the brain. He details the post-mortem appearances of a few cases in illustration, and says that "all the arguments founded on the doctrine of sympathy and irritability are drawn *ab ignoto*; and it seems much more con-



formable to reason and observation to infer that such convulsive affections arise from some derangement of organization, however temporary, than to resort for an explanation of them to imaginary causes, and such as offer to the mind no satisfactory conclusions."

In reply to this reasoning it may be remarked, that our knowledge both of the physiology of the brain and spinal marrow, and the pathology of its many diseases, is far too obscure to allow of our drawing any inferences not warranted by established facts. It is surely more philosophical to infer change of structure only where we find it, and to suppose some other state capable of disordering the functions of parts, where we do not find it, especially when such conclusions seem strikingly confirmed by a fact that might almost suggest itself: the slowness, the imperfection, or impossibility of cure in the former; the suddenness, and perfection, and facility, with which it is often accomplished in the latter. No one is so ridiculous as to suppose that *no change* takes place in functional disorder; but it would certainly seem, that, in such as are said to depend on irritation, *no change of structure* takes place, no deranged organization. A person ascending in a balloon, at a certain height becomes oppressed in consequence of the rarity of the air, not from any change or breach in the mechanism of his frame, but because of the altered relation between that frame and the atmosphere.

We have felt it necessary to dwell a little on this subject, from a conviction of the great importance, in all disorders of the system, of distinguishing the organic from the functional. We are quite of Dr. Underwood's opinion, that, even when convulsive affections prove suddenly fatal, they are most commonly sympathetic, or dependent on irritation; and in believing this, we are treasuring up for ourselves new hopes for our remedies, and increased zeal in their application.

From all that has been said, it will not appear remarkable that irritation affecting the upper portion of the spinal column should sometimes exhibit symptoms closely resembling those of hydrophobia. In fact, hydrophobia itself, as



Hufeland and Dr. Reid, of Dublin, believed, would seem to be a disease, though of a peculiar nature, whose seat is entirely in the spinal marrow, and which seems to affect the superior part, and particularly that portion of it which is allotted to the function of respiration. The manner in which it commences, and the symptoms which it gives rise to in its progress, as well as the mode of its termination and the appearances on dissection, all confirm this opinion. The pain commencing in the wound or cicatrix, and proceeding from thence to the back of the neck, and, when the wound is in the hand or arm, following, or rather falling into, the course of the spinal accessory, or external respiratory nerve of Sir C. Bell; the freedom of the intellectual functions from disorder in the commencement, the derangement of the digestive organs, loss of appetite, nausea, vomiting, constipation, and sometimes colic; the pain in the back of the neck; the difficulty of swallowing liquids; the violent spasm of the glottis; the convulsive affection of all the respiratory muscles whenever the attempt is made, and the fatal event being always the result of a failure of the action of respiration, are all symptoms which point out a derangement of the functions of nerves having their origin at the upper portion of the spine. The exquisite acuteness of all the senses, the excessive sensibility to light and sound, and other impressions, is quite in accordance with this idea; since, if the disease commences in the upper part of the spinal marrow, it is impossible to suppose that the fifth nerve, which is so necessary to the functions of the senses, could, from the nearness of its origin, escape being implicated. As it is a disorder that always terminates fatally, it is not at all surprising, that, in the progress of it, the whole nervous system should become affected; and excessive nervous excitement, violent general convulsions, and high delirium should, before its close, be added to the symptoms above mentioned. The appearances on dissection confirm the fact of the spine being its seat; though from the remark we have made above, on the constant fatality of its termination, it would seem that morbid anatomy cannot, except after a great number of dissections, indicate pre-

cisely the part of the nervous system where it commences. As the entire of this system is violently affected before its conclusion, all its parts, from their intimate connection, would probably exhibit morbid appearances. Thus it is observed that traces of inflammation are found in the brain or its membranes, in the cerebellum or its membranes, and in the membranes of the medulla spinalis. However, what is more to our purpose; inflammatory appearances are never found wanting in the bronchial tubes, scarcely ever in the trachea about its bifurcation, and seldom in the larynx. From all these circumstances, perhaps it may not be too much to hope, that something may yet be done in the prevention or cure of this dreadful disorder, by early attention to the spine.

In returning to the irritative affection, we have only to refer our readers to one or two instances of general disorder of the cord given in the course of these observations, in which all the symptoms of the hydrophobic paroxysm occurred, marking one of the Proteian forms of spinal irritation.

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#### SECTION IV.

##### *Affections of the Motor System connected with Cervical Irritation.*

Perhaps next in frequency to affections of the respiratory are those of the motor system, convulsion and paralysis. We know not how it happens persons so readily suppose, that intensely painful affections may depend on trivial nervous irritation, and are yet so hard of belief when violent convulsions are attributed to the same cause. From the circumstance of disorders of the muscular system frequently occurring in conjunction with those of the sensitive, as they do in numerous cases, and from the fact of their being benefited in both by the same treatment, it is evident that the corresponding columns of the spinal cord, though so very different in their functions, are strongly analogous in

their nature — that is, they are not only capable of being affected by the same cause, but that one is seldom disturbed in its functions without some derangement of the other. We shall see, in the milder cases of spinal irritation, attacks of pain attended by or alternating with tremors, spasms, palpitations, and muscular debility; and in the severer ones, fits of excruciating torture, or total insensibility, alternating with violent convulsion or paralysis. It is not much then to infer, that the cause of disturbance is the same, whether it affect the source of sensation or of motion, and that it may affect both or either indifferently.

This conclusion would naturally lead one to suppose, that some forms of many terrific diseases, which have been suspected to have their origin in organic affection of the brain, may depend on some obscure derangement of the nervous power at its source in the spinal column, quite within the control of remedies if properly applied. We know no form of disorder usually produced by change of structure, which irritation or a disturbed state of the nerves of the same structure may not imitate; and if chorea, convulsions, epilepsy, trismus, and tetanus, can be excited by organic disease of some part of the spinal marrow, as has been conjectured, we are sure it may be equally so by mere irritation.

It was from conjectures of this nature it occurred to us to make an examination of the neck in some cases of epilepsy; and we soon met with a few, in which there was extreme tenderness of the upper cervical vertebræ. They were almost all of long standing — one, so long as fifteen years — and yet, that they were cases of mere functional disorder, the facility with which they were relieved can leave no doubt. Whether that disorder consisted in some altered state of the circulation in the spinal marrow or medulla oblongata, or on derangement of the nervous power from other causes, we have no means of ascertaining.

Previous to detailing these cases, we may briefly advert to the perplexity observable in the arrangement or classification of all the affections of the motor powers in the systematic treatises, both of the older and more modern



authors. In many instances they were classed, not according to their real seat or nature, but entirely by their external characters, and cast into different genera, as the irregular action of the muscles happened to be permanent or prolonged contraction and rigidity, or violent convulsion alternating with relaxation, or as the muscular power chanced to be altogether or partially suspended; so that diseases which are often serious and dangerous, were placed beside those which were neither one nor the other. Dr. Cullen, in speaking of catalepsy, says, "that he is persuaded it does not at all differ from the genus apoplexy;" and he has hence arranged it as a species of that division. And Dr. Mason Good conceives the disease which he has called extasy, or that affection in which there is a suspension of sensation and volition, with rigidity of muscles—the body remaining erect and inflexible—bears such an analogy to tetanus, that he recommends the same treatment for both. Yet we have seen, in a single case of general irritation of the spine, all the different forms of affection of the muscular powers which have been mentioned occurring in succession, all depending upon disease of one kind, and in one part of the system. It is hence obvious, that diseases (at least those affecting the source of nervous power) differ more in the specific nature of the morbid action than in the structure affected, or in the external symptoms from which they usually derive their name. The end of all classification is to convey a clear idea of the nature of diseases and their analogies with one another; and it defeats its object, and leads to mischievous practice, when it minutely insists on differences which are not of any consequence, or imagines resemblances which have no real foundation in nature.

It is in the study of the morbid action alone that we are to discover the essential characters of complaints; and we believe that in this study, as far as regards the nervous system, lights as important will be furnished to us from an improved physiology, as we can ever derive from the labours of the morbid anatomist. When we are ignorant of the specific diseased action, we may yet be guided in our ar-



rangement by ascertaining whether it involves the structure or the functions of the part affected; and where we cannot attain even this, it is something to be able to fix the seat of the complaint. Indeed we very much question whether a knowledge of the tissue affected, and whether its organization was altered or its functions only deranged, would not suggest a more effective treatment, than a mere consideration of the analogies or resemblances the external characters of the disease presented to those of others, with the management of which we are better acquainted. This remark occurred to us with particular force on looking over many cases of muscular affections in popular medical works. It would seem from the treatment adopted in many of them, that the spinal cord, which as the source of all motion must have been intensely affected, whether in a primary or secondary way, claimed little attention; and it does not appear improbable, that some of them (cases of tetanus especially), might have ended more favourably, if the treatment had been as strenuously directed towards it, as to the simple combating of violent symptoms with little reference to physiology. But to return to the epileptic cases.

LIX. Anne Kilfoyle, aged 24, a girl of full habit, in whom the catamenia had never appeared, but who was otherwise in good health, applied at the Dispensary in December 1828, in consequence of epileptic fits, to which she had become subject for the last twelve months; the fits usually occurred about once a week, sometimes two or three times the same day, seldom lasting long, and occasionally coming and going so suddenly, that she had no consciousness of the attack until made aware of it by her friends. She had frequent headach, extreme tenderness of the fifth and sixth cervical vertebræ, and slight sensibility to pressure at the sixth and seventh dorsal on the right side. When these fits commenced a year ago, she was affected with convulsive motions of the left arm and leg, as in cases of chorea. No medical treatment that had been employed gave her any relief.

On discovering the cervical tenderness, the treatment was immediately directed to the spine; twelve ounces of blood

were taken from the temporal artery, a blister was applied to the tender vertebræ, and a calomel purgative was administered. She applied again on the 11th of February following; she had never had a fit since her former attendance, a period of six or seven weeks, but had a disposition to headach within the last few days, and grew apprehensive. The vertebræ had lost their soreness after the blister, but the third cervical had again become tender. As the girl was unwilling to submit to a repetition of the blister, active calomel purgatives were ordered; the fit, however, recurred a short time afterwards, and on the 24th of March she again became a patient at the Dispensary. She was affected with *muscæ volitantes* and heaviness of the head for some days previous to the attack, and a cloud came before her right eye immediately previous to its occurrence. The head still continued affected, and there was tenderness of the first and second cervical vertebræ.

The blood-letting, followed by purgatives, was again resorted to, and it was agreed to delay the blistering for a few days, that we might ascertain whether the mere depletion would effect a cure. We found it did so, as the spinal tenderness was soon completely removed, and a year passed from that time without a return of any complaint. Within the last few days she has had a slight fit, and is about to submit once more to the same treatment.

We know not whether in this case the detraction of blood succeeded, by relieving a state of distension, or by lowering vascular action in the brain or spinal marrow, upon which some obscure nervous irritation depended; it was sufficient that the spinal tenderness indicated an affection of the cord, probably not of an organic nature, and requiring the same treatment, whether connected with irritation or congestion in the cerebral mass itself or not. The result was of course encouraging enough to induce us to continue the inquiry, and a message was in consequence sent to a young girl, who had been a patient at the Dispensary about two years before with the same disorder, and had been dismissed uncured, after a variety of treatment.

LX. She immediately attended, said that she has had

these fits attacking her now for the last four years and a half, occurring three times a week. That she is first affected with pain in the temples, her stomach then becomes sick, and she falls. There was found on examination great tenderness of the lower and middle cervical vertebræ, and of the eighth or ninth dorsal; pressure on the latter, excited darting pain at the ensiform cartilage. The catamenia had been very irregular, occurring perhaps only once in three months. A pint of blood was taken from the temporal artery, calomel and saline purgatives were administered, and a blister was applied to the nape of the neck. She was instantly relieved, and from that time to the present (several years) has not had a single fit. Whenever any threatening symptoms occurred, similar treatment was immediately pursued.

LXI. Soon after the occurrence of these cases, a young woman while waiting in the Dispensary for medicine for her father fell down in an epileptic fit, and was violently convulsed. On her recovery, she said she had been subject to these fits for fifteen years, occurring sometimes three times a day. She had done nothing for their prevention for many years past, conceiving it perfectly useless. All through she had at times suffered from pain in the brow, stomach, abdomen, and groins. On examination it was found all these pains were successively brought on by pressure at the corresponding parts of the spine; the tenderness was considerable at the three upper cervical vertebræ, and the eyes looked heavy. Blood-letting, purgatives, and blistering were employed, as in the foregoing cases, with immediate and perfect success. Nearly twelve months are now gone by without the occurrence of a single fit, although it was almost of daily occurrence for fifteen years. This patient was about twenty-nine years of age, and had the catamenia regularly. As the tenderness of the vertebræ had a constant tendency to recur after the blister had healed, she was directed to rub small portions of tartarized antimonial ointment frequently along the spine, so as to keep up a constant counter-irritation there; and she found so much benefit from this plan, that she continued for some months of her own



accord, pursuing it strenuously whenever she was attacked with pain in the brow or with other threatening symptoms.

Since these cases were under our care we have met with others, chiefly in men, in which no tenderness whatsoever of the spine could be discovered; and the treatment here adopted, as well as every other that could be suggested, was wholly unsuccessful. The curable cases are very likely to escape notice, if an examination of the spine is not made in all, especially if, as in the instances detailed, they have lasted a long while, and are unattended by hysterical symptoms. A great degree of irritation may exist in the spinal nerves with excessive tenderness of the vertebræ, and yet the patient be wholly unconscious of it.

In adverting to the spinal tenderness, as a means of distinguishing these cases from organic epilepsy, we may direct the reader's attention to an observation of Dr. G. Gregory's, which seems very judicious and practical, although we should scarce venture to say universally true. He says, in speaking of the frequency with which fits of epilepsy recur, "that the intervals between them become shorter as the disease becomes more firmly established, until at length the patient hardly passes a day without one." "It is important, however," he says, "to bear in mind, *that genuine epilepsy never occurs oftener than this, and, therefore*, when a person has more than one fit in the day, we may reasonably conclude that the disease is of an hysterical nature."

Convulsive attacks unconnected with the epileptic paroxysm or fits of insensibility, are also occasioned by irritation at the same part of the spinal cord. It is probable attacks in children, arising from dentition, or worms, or from disordered bowels, are of this nature, whether accompanied by spinal tenderness or not. We have reason to believe irritation affecting the spinal cord may produce very serious symptoms, even before the spinal tenderness is perceptible; but, generally speaking, it will be found that the tenderness precedes them. The convulsive affections which are apt to take place in women of hysterical habits, especially after lying-in, are almost always dependent on irritation of the cord, and are very different from true puerperal convulsion.



It is of immense importance that we should not mistake the one for the other, as the treatment they require is so different; the muscular spasms or convulsions arising from irritation seldom requiring blood-letting, and admitting of almost immediate relief from opiates and antispasmodics, while puerperal convulsion must soon destroy the patient, if speedy and active depletion be not resorted to. With respect to convulsions dependent on irritation, it may be remarked, that they are sometimes connected with a degree of vascular fulness, sometimes with debility; irritative reaction occasioning in the latter case what the stimulus of distension does in the former. Hence even in irritative affections, local depletion by leeches, or even small blood-lettings, are of use, but this will be found to apply chiefly in young subjects; the same remedy in other instances can only increase the evil, particularly in those consequent to severe floodings or hemorrhages, which we believe are not infrequent.

These attacks sometimes consist in general twitchings or catchings of the muscles; in others the spasms are prolonged, and attended with a degree of tetanic rigidity. We remember once to have met with a case of convulsions in a child, consequent to the small pox, which presented symptoms of so singular a character that we shall venture to relate it, although we cannot pretend to connect it absolutely with irritation of the spine.

LXII. T. C. aged about four years, was seized a short time since with small pox, which commenced with epileptic fits. Towards its conclusion they occurred again, and he was in almost constant convulsions for two days. He was sometimes insensible, sometimes conscious but agitated, sometimes furious. He was held forcibly in his father's lap, every muscle in his countenance, every limb, and even the trunk of his body, were in irregular and extraordinary motion. It was what one would call extravagant restlessness; perpetual, unmeaning, violent action, becoming convulsive if restrained. He appeared to be sensible, knew his mother, and kicked at her when she endeavoured to hold his limbs. She dared not keep him in her lap, as whenever

she attempted it, he bit at her furiously. The pupils of his eyes were natural, but there was an appearance of impatience and wildness in his countenance, and he was continually and loudly grinding his teeth like a child in hydrocephalus. He recovered perfectly in a few hours by forcing him to swallow active doses of scammony and calomel, putting him in a warm bath, and blistering the nape of his neck.

There is a case not very unlike this, given in M. Broussais' Journal as one "*of gastro-cerebral inflammation, with some symptoms of hydrophobia.*"

LXIII. A boy five years of age, of vigorous but irritable constitution, was seized on the 1st of May with symptoms of gastro-enteritis, which were removed by leeches to the epigastrium and diluent drinks. In the night of the 12th of May he awoke from his sleep with a loud laugh, which was quickly followed by piercing cries, and then convulsive movements of the whole body. His face was flushed, his eyes sparkling, and he attempted to bite and to squeeze tightly in his arms every thing that came in his way. The parents were alarmed at hydrophobia, and summoned two physicians: when they arrived the patient was in an interval of calm, lying without sense; his eyelids shut, but the balls rolling about underneath; pupils greatly dilated, but still sensible to light; face of a purplish cast, but still burning hot; pulse contracted, hard, and quick; carotids beating strongly. Twelve leeches were applied to the region of the jugulars, sinapisms to the feet, cold lotions to the head. In five hours the physicians returned, and the scene was greatly altered: the little patient seemed in the jaws of death; his whole surface was pale and cold, pulse imperceptible; the respiratory movements were the only indications of life. These phenomena resulted from an excessive hemorrhage. The leech-bites were stopped; stimulating frictions were employed, and some spoonfuls of soup were injected into the stomach. The boy slowly recruited, and a corresponding reaction took place, when diluents were prescribed. During the succeeding day and night he had repeated vacillations, between paroxysms of excitement and alarming states of collapse. The latter

however were predominant; but at the end of the third day he had become sensible, and gradually recovered.

M. Broussais regards this as a case of cerebral inflammation, and conceives the boy's life was saved by the local bleeding, carried to syncope. Dr. Johnson, from whose interesting review the case is taken, judiciously remarks, that the symptoms were not those of either acute gastric, or cerebral irritation, and attributes them altogether to *some powerful irritation of the gastric or intestinal nerves, affecting the nervous system, and imitating inflammatory action*. The frequency of this we have already sufficiently illustrated in cases of dental or gastric irritation, occasioning disturbance of the upper portion of the spinal cord, and so disordering the sensorial or motor functions. That this child's attack originated in gastric irritation, the primary affection is a fair evidence; and that it would have been removed at the commencement by means of the same active purgatives given in the preceding case, with cold lotions to the head, and perhaps counter-irritation at the back of the neck, we do not entertain a doubt. Generally, however, it is safe and unobjectionable to detract a moderate quantity of blood.

The following is a singular case of convulsive affections originating in concussion of the spine.

LXIV. Mrs. ———, aged 35, is occasionally affected with stiffness and rigidity of the muscles of the neck, and numbness of either arm (at one time the right, at another the left), which generally lasts a week or a fortnight, and is exceedingly distressing. It is always preceded by a twitching at the angle of the mouth, and pain darting from thence to the back of the neck, then down the arm, and immediately after, general rigidity of the muscles and difficulty of turning the head. There is extreme tenderness on pressure at the third cervical vertebra. The attack originated in a fall on the stairs, in which the sacrum was struck with great violence. She was unable to use the lower limbs for some days, and when they began to recover she became affected in the neck and arms. At the time of the fall she felt a general shock or concussion through the spine: the

complaint was removed by the application of leeches and blisters to the cervical vertebræ.

It is not improbable that the locked jaw of infants depends upon some such irritation of the cervical part of the cord, originating in disordered bowels. We have frequently met with a stiffness of the muscles of the neck, and sometimes rigid spasm drawing the head backward in older children suffering with intestinal fever, which are we believe attributable to the same cause. Chorea sancti viti may be also very well supposed to have a spinal origin. This however we have had no opportunity of determining: in the only case met with since these inquiries were commenced, there was no spinal tenderness; it followed an epileptic fit in an adult, and was cured by carbonate of iron. We recollect many years since to have met with the disease as a sequela of hooping cough, when it was readily removed by the sulphate of quinine.

Certain muscles or sets of muscles, which are naturally called into action by particular sensations, are sometimes thrown into spasmodic or irregular agitation, when those sensations do not exist, and apparently as mere symptoms of the state of spinal irritation. Whether in such cases the actions are indicative merely of great and preternatural irritability of the nervous system, evincing itself in the most common and ready associations of involuntary action, or of absolute disorder of some one portion of the cord in which those associations have their source and centre, we cannot possibly tell. The prolonged fits of laughter, or of sobbing, which usher in severe hysterical attacks, are of this nature. Fits of yawning are less common, but are not the less characteristic of the disordered cord, and in severe cases continue for a distressing length of time, sometimes for hours or days. We recollect, in one instance in which excessive debility was brought on by nauseating doses of tartar emetic, fits of frightful yawning, affecting the muscles of the back of the neck, drawing back the head, and occasionally evincing a disposition to excite general convulsions, occurred. As in healthy subjects yawn-



ing is a sign of fatigue, so in the diseases of the nervous it is a mark of great debility. Occurring after severe hemorrhages, it is sometimes the forewarner of great danger, and is apt to precede syncope. It may occur in hysterical habits however, or in those affected with spinal irritation, even in states of considerable prostration of the strength, without necessarily exciting uneasiness or alarm.

Hiccup is another of those spasmodic actions usually excited by irritation in the stomach itself; but it is probable that it also very often arises from mere irritation at the origin of the phrenic nerve. There seems to be scarcely any nerve belonging to the respiratory system so excitable as this in nervous habits. It is almost always the first thrown into irregular and sometimes convulsive action in attacks of hysteria. We see them usually ushered in by distressing fits of laughter or sobbing, and often accompanied by a sense of constriction in the epigastrium, with difficulty of inspiration. M. Jolly characterizes the disorders of the phrenic nerve by the constriction spoken of, by hiccup, often attended with eructations and vomitings, and by affections of the respiratory functions, sometimes exhibiting all the phenomena of asthma. The difficulty of inspiration which we have mentioned, however, is no way allied to the asthmatic paroxysm; it is simply a want of power to expand the chest, connected with irregular action of the respiratory muscles, perhaps on prolonged spasmodic action of the diaphragm and abdominal muscles.

We doubt exceedingly whether the phenomena of asthma can be fairly looked upon as symptomatic of phrenic neuralgia at all, and feel disposed to believe the par vagum is always implicated where they appear. The following, not perhaps a very well marked case, has just fallen under our care.

LXV. Mary Danaher, aged 46 years, ill one month, complains of a sense of weights or of a lump at the sternum, which prevents her drawing her breath; finds an unaccountable difficulty in sighing, and is troubled with great flatulence. Wakes up sometimes suddenly at night with, as she expresses it, "a fright in her heart"—the catamenia

is regular. She attributes her complaint to having been employed in lifting heavy loads about a month since. There is great tenderness of all the cervical and dorsal vertebræ, but it is the greatest at the seventh or eighth dorsal. *Pressure on the latter occasions instant hiccup and eructation of wind,* which is not the case when the cervical is pressed. This would perhaps make it probable, that the diaphragm and other organs are as frequently affected by irritation, transmitted from the cord through the medium of the ganglia of the sympathetic, as through their own particular nerves. If there was no tenderness of the cervical vertebræ, we should not in this instance have considered the phrenic nerve to be engaged in the disorder. As spasmodic affections of the diaphragm are frequent and sometimes troublesome symptoms, in fevers and other diseases, it is at all events well to remember the possibility of their dependence upon an irritated state of some portion of the spinal marrow.

Next to violent or irregular action of the muscular power, we come to consider those cases in which it is diminished, or wholly suspended, as in partial or total paralysis. These, though apparently of so opposite a nature, we shall often find dependent on the same irritation affecting the origin of the nerve of the part affected. As paralysis occurs more commonly as an occasional symptom, in cases of general irritation of the cord, than as an effect of it, limited to a point or very small portion, we shall hereafter have many opportunities of offering illustrations: the following are given as belonging to irritation of the cervical portion.

LXVI. Margaret Downes, aged 35, applied at the Dispensary November the 12th, in consequence of a paralytic affection of the left arm; complained of numbness and of a painful sleepy sensation in it. The weakness of the arm commenced about half a year ago; but it has been perfectly palsied within the last six weeks: there was no wasting of the muscles. She had been under much medical treatment for it, but had got no relief; her general health was good.

On examining the spine, of any affection of which she was not conscious, *tenderness of the second cervical vertebra was discovered at the left side.* She now said she felt pain there

on throwing back her head, but had no idea the state of her arm could be connected with it. She attributes the soreness of the neck to its having been sprained about six months since, by the fall of a heavy can off her head. It was subsequent to this she first observed the weakness in her arm. Repeated blisters were directed to the tender vertebra, by which within a fortnight all soreness was removed, and the paralytic arm restored to its full power: a sensation of numbness in the fingers remained for some time after, but it was not troublesome enough to induce her to continue the blistering.

In the next, a case of true spinal irritation, the same paralytic affection appears as one among the train of symptoms, yet lasting but a few hours, and leaving mere debility of the muscles after it.

LXVII. Kitty Farrell, a widow, aged 43, was seized a week since with great tremblings or shiverings, and pain in all her joints, which were relieved in a few hours by profuse perspiration. Menorrhagia then succeeded, accompanied by yawnings, palpitation, oppression, pain at the pit of the stomach, and general debility. She had been delicate, and subject to these attacks for a length of time; sometimes instead of tremblings or shiverings they commenced with fits of uncontrollable laughter, followed by faintness, swelling and choaking at the throat, sense of suffocation, and eructations or pain of stomach. At other times she was struck *with numbness and powerlessness of the right arm*, frequently lasting for hours. Since first the arm was attacked in this way, she never had the same command of it as of the other, but always felt it numbed and weak. She was frequently affected with pains in all her limbs, all over her, as she expressed it.

There was some tenderness of the middle cervical vertebræ, and an acute degree from the fourth upper dorsal to the eighth or ninth. Pressure on any of these last, especially the seventh or eighth, brought on violent pain, which darted forward to the ensiform cartilage. When the last-mentioned vertebra was pressed on, she said "she thought her heart would break."

In the first of these cases, which seems to differ from the latter only in intensity, the palsy was more permanent. This is somewhat rare, but it will be seen in the course of these illustrations, that temporary paralysis is a frequent attendant on irritation of the spine. The rapidity indeed with which it takes place and passes away, is a very interesting fact in the pathology of paralytic affections\*.

We cannot forbear noticing two cases related by Mr. Abernethy†, which strictly apply to our present subject. He gives them as instances of affections of the digestive organs acting on the medulla spinalis, so as to produce sympathetic disorders of the limbs, without operating through the medium of the brain, as they were formerly supposed to do.

LXVIII. "A female patient aged 27 years, was lately admitted into the Hospital with paralysis of the arm, which had come on suddenly. She complained of much pain when pressure was made along the outer margin of the scalene muscles, where the nerves emerge that form the axillary plexus. Her digestive organs were greatly disor-

\* A young lady whom I had been in the habit of attending through a long course of delicacy, from irritation of the spine, informed me, that her mother was subject to paralytic attacks of an extraordinary nature, which were nevertheless always relieved in a few hours. She was always first seized with sudden pain over the left eye, and sickness of stomach, which were soon succeeded by numbness and paralysis of the left side of the tongue, and the whole of the left side of the body. These symptoms were the precursors of violent headach, which generally lasted for some days. She sometimes obtained relief by an emetic, occasionally by purgatives and rest. She was subject to the complaint for years; it was invariably brought on by great fatigue, and especially the fatigue of riding. This was probably a case of cerebral irritation; and certainly a singular instance of how slight a derangement may sometimes produce symptoms usually attributed to serious disorganization. We recollect once having been informed by a gentleman labouring under hemiplegia from organic disease, that while standing in a shop one day making some purchases, he suddenly recovered the perfect use of his side for a minute or two; the debility however then returned, his arm hung, and his limbs were dragged as before: he afterwards died from a renewed attack.

† "On the Constitutional Origin of Local Diseases."



dered ; and in one week, by means that could only operate directly on those organs, she regained the use of her arm."

LXIX. "A gentleman of the medical profession, whose digestive organs had been long disordered, suddenly lost the use of his right arm, without any apparent disturbance of the cerebrum. A professional friend asserting that the paralysis was a consequence of the disorder of the chylopoietic viscera, the patient promised strictly to adhere to any plan of diet or course of medicine that his friend would prescribe. The only medicines ordered were pills containing two grains of calomel at night, and moderate purges on the following morning for one week. The bowels were cleared daily, but not materially disturbed. On the sixth day, however, several copious dark-coloured discharges took place, and the patient immediately regained the use of his arm."

There are very many paralytic affections connected with the subject of cervical irritation, of deep interest to the medical practitioner, of which, however, any thing we could offer would amount to little more than conjecture. We allude particularly to partial or total paralysis of the par vagum ; the recurrent, the superior laryngeal, the phrenic, or the external, or other respiratory nerves. The involuntary or ganglionic system is less liable than the cerebral or spinal to be affected by loss of power or incapability of performing its functions, but that it is so occasionally we may infer from the action of certain poisons.

### CHAPTER III.

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#### AFFECTIONS PRODUCED BY IRRITATION OF THE DORSAL PORTION OF THE CORD.

So many cases have been already given of affections of the cervical portion of the cord, in which the dorsal was also engaged in the disorder, that much of what we might have had to say of those belonging especially to the latter, has been anticipated. Our account of them must therefore of necessity appear meagre.

The complaints arising from interruption or derangement of the functions of the dorsal cord, are of course almost wholly confined to the superior extremities and upper portion of the trunk. They consist, like those already described, simply in pain or loss of sensibility, in convulsion or loss of power; or they may appear in the general disturbance of the action of particular organs. Among the first class, we meet with pains at the collar-bone, shoulder, shoulder-blade, and arm, often mistaken for rheumatism; or at the middle or lower part of the sternum, for an affection of the lungs, especially when attended with a short dry cough, in delicate subjects; or in the breast, sometimes attended by hardness or tumefaction, and so suggesting apprehensions of cancer. These are probably of the same nature with the painful tumours of the mammæ, described by Sir Astley Cooper. We again meet with pain of side just below the right or left breast, frequently exciting suspi-

cions of phthisis\* ; and in the right hypochondrium, simulating an affection of liver. Lastly, we have the gastrodynia, about which so much has been already said ; and sometimes a sense of tightness at the epigastrium, or of a belt or cord round the waist, such as usually accompanies caries of the vertebral bones.

The attacks, in which loss of sensibility is the prominent symptom, are those of numbness, and perhaps dyspnœa. Loss of power in the motor functions appears, either in total or partial paralysis of an arm or hand ; or when affecting the intercostal or external respiratory muscles, in a sense of weight on the chest, and oppression or incapability of expanding its walls.

A gentleman, who had recovered from an attack of hemiplegia dependent on organic cerebral disease, was always warned of a disposition to a return of the complaint, not only by an increased weight and loss of strength in the affected limbs, but by a sense of increased atmospherical pressure on the chest at the same side, and a proportionate difficulty of elevating the ribs. Among the disturbed functions of particular organs, may be noticed again some affections of the lungs, diaphragm, and stomach, which came under consideration before ; cough, oppression, spasms of the bronchial tubes or asthma, hiccup, uncontrollable fits of laughter and sobbing, altered secretions in the stomach, flatulence, eructations, distension, &c. These, which are perhaps strictly disorders belonging to the phrenic and pneumogastric nerves, are yet, it would seem, sometimes connected with tenderness of the dorsal spine ; a fact we cannot wonder at, when we recollect the great influence of the cord on the vital functions. Cases of syncope, or of preternatural pulsation of the heart or descending aorta, seem, as we have before shown, chiefly connected with tenderness of the upper dorsal vertebræ, in common with the lower cervical ; but, in fact, symptoms of disturbed and

\* This pain is sometimes a mere uneasy sense of numbness or constriction, or a feeling as if a walnut was pressed within a tight belt. More frequently still, it is, as Dr. Brown of Glasgow describes it, a weary, bruised pain.

generally inordinate action of the vascular system are to be met with in almost all instances of general irritation of the spinal marrow.

There are but few points, on which it is worth while to offer a remark with respect to these affections. As they often set in, or are attended at a very early period by pain and tenderness in the right hypochondrium, and are sometimes relieved by mercury, it becomes an interesting question, whether they have originated in disease of liver, or whether the pain and tenderness are truly nervous, and relieved only by that specific action which it would seem mercury exhibits in some diseases of the cord as well as of the liver. It would also appear very deserving of inquiry, why extreme tenderness, with the corresponding pain of stomach, is so much more frequently met with in the situation of the seventh or eighth dorsal vertebra than at any other point of the spine. Dr. Brown attributes it to the great degree of motion which takes place there; but, if that were the case, we should have it at least as often in the upper lumbar, and much more frequently in the cervical portion of the column, which is in continual motion. Yet this is by no means the fact. Tenderness about the eighth dorsal vertebra is almost always met with in the worst forms of spinal irritation, is seldom absent in the mildest, and sometimes exists in itself the sole malady. It is continually found a prominent and troublesome symptom in advanced pregnancy, in cases of uterine disorder, in derangement of the digestive organs, and in mental affections in females of hysterical habits—constituting this portion of the spinal marrow, as it were, the sensitive centre, to which most functional affections of the system are in the first instance referred. These considerations can at present only suggest vague conjectures. We shall therefore confine ourselves to a simple statement of such cases belonging to the dorsal spine as have fallen under our notice, and seem to possess any interest.

LXX. A lady of delicate constitution had been for a considerable time, as she was informed by her medical attendant, labouring under an affection of liver. She had constant troublesome pain and soreness in the right side, beneath the



short ribs, and sometimes up between the shoulders: there was slight disorder of the digestive organs. She applied to us, for the purpose of being put under the influence of mercury; but, on examining the spine, we found considerable tenderness about the ninth or tenth dorsal vertebra, which there was reason to suppose occasioned the affection of side, as the patient's countenance indicated no very serious disease. She was therefore ordered mild purgatives, and a blister to the tender vertebra. The complaint, which had annoyed her for months, was thus, to her great astonishment, perfectly cured in a few days.

It is always useful, in these doubtful cases, to examine the opposite side, in which it will be often found symptoms precisely similar exist—a tolerable assurance that they are, in neither one nor the other, connected with the state of the liver. The pain frequently changes sides, as in the following instance.

LXXI. M. L., aged 20 years, was attacked, about twelve months since, with pain in the right side, and at the pit of the stomach. It was felt as high as the margin of the breast; and there was such soreness of the ribs, as prevented her lying on that side. When she attempted to turn in the bed at night, she was seized with stitches. She was often troubled with heartburn, and sometimes with fits of lowness and sinking. In the course of a few weeks the pain extended to her back, and eventually changed altogether to the opposite side under the left breast, when the same soreness and difficulty of lying was experienced. It subsequently moved lower down, over the left ileum. The pain in the stomach, all through her illness, accompanied, or was brought on by, the other pains. The menses were very irregular. She attributed her complaints to carrying heavy loads (drawing water on her head), as they commenced with that employment. Lifting a weight always brought on the pain and "*stitches, as if her heart would break.*" Lying down gave immediate relief. There was tenderness of the eighth dorsal vertebra, pressure on which brought on the pain at the stomach, and of the fifth or sixth, at the middle of the sternum.

LXXII. Mary Halloran, aged 40, complained of pain down both arms, from the shoulders to the wrists; sometimes could hardly dress herself, it was so distressing. There was no soreness on pressing the muscles of the arms or the joints. The pain commenced in the left arm, about two years ago; then extended to the right. Had a similar affection in the back and left shoulder, about twelve years before. Tenderness was discovered at the seventh or eighth dorsal vertebra; and a cure was effected by counter-irritation there, and by the use of purgatives.

LXXIII. Miss —, aged 30, had been for a long time in delicate health; complaining of pain in the chest, cough, oppression, and feverishness. These were sometimes attended by symptoms manifestly hysterical. Her family were very apprehensive that she was in consumption. On examining the spine, great tenderness was discovered about the eighth dorsal vertebra, which corresponded with the site of the pain in the front of the chest. Although she had not previously complained of the part, she said she had for a long time felt an uneasiness there, and sometimes a sensation as if a hot iron was laid up to it. She was cured by attention to the general health, tonics, air, and gentle exercise.

LXXIV. Catherine Williams, aged 25, was seized with sudden violent pain at the pit of the stomach, succeeded by a feeling of lowness, and at last by stupor, loss of speech and motion. She became better towards night, but had a return of the attack in the morning. The lowness and stupor eventually came on in fits, preceded, not by the pain of stomach, but by general shiverings. In these fits she lay, with her eyes closed, moaning, and sensible to every thing about her when roused or excited, but incapable of speaking. The pupils of the eyes were not dilated. Whenever she took drink, she was attacked with hiccup and flatulent eructations to a distressing degree. Her skin was cool; tongue clean; pulse 90, but variable; catamenia regular. There was no tenderness of the cervical vertebræ; but she complained, when pressure was made about the eighth or ninth dorsal. After free purgation, she slept well;

but the fits recurred on the succeeding morning, with cramps or contraction of the fingers of the right hand. As the purgatives gave no permanent relief, a blister was ordered for the tender part of the back. She neglected to have it applied, however, and passed another day in the same state as the preceding. She then submitted to the blister, and had a rapid amendment. The aperients were continued throughout the treatment.

We remember to have seen a case precisely like this, occasioned by general nervous irritation, in advanced pregnancy. The fits of insensibility were put an end to, by the fright at an attempt to bleed her—which, however, she did not permit; and the other symptoms were relieved by aperients and antispasmodics.

We shall only offer one case more, in illustration of these dorsal affections; which, if it is to be looked on simply as an instance of irritation, should impress us with the necessity of examining the vertebral column in all chronic as well as acute abdominal pains.

LXXV. Michael O'Donnel, aged 45 years, had been affected for three years with pain at the right side, about the situation of the colon, but confined to a very small spot. It intermitted very little during this period; and occasioned much flatulence, loss of appetite, and emaciation. On examining the spine, pressure on the ninth dorsal vertebra *brought on the pain in the colon, and eructations*; the pulse was natural, and the tongue whitish. We find no record of the progress of the case.

## CHAPTER IV.

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### AFFECTIONS PRODUCED BY IRRITATION OF THE LUMBAR PORTION OF THE CORD.

IF functional affections become more interesting as they bear a closer resemblance to organic diseases, there are very many belonging to the lumbar portion of the cord, which claim particular attention. They were in fact continually confounded in general practice, before the late discoveries in physiology, although a few eminent men began at an earlier period to detect and distinguish them. Mr. Abernethy, very many years since, pointed out the existence of a disease simulating an affection of the vertebral bones, and yet not of that nature, but, as he believed, a nervous disorder dependent upon disturbance of the digestive organs. Mr. Brodie, as has been already mentioned, published cases resembling caries of the hip joint or ulceration of the cartilages, in which no such complaint existed. He considered them as hysterical affections. Dr. Gooch gave interesting accounts of painful complaints of the uterus, unconnected with structural or inflammatory disease of that viscus. These, with numerous other disorders, are now so well known as to form a class of neuralgic affections; but they are still for the most part looked upon either as idiopathic, or as symptomatic of irritation in some distant organ, and are seldom attributed to the source we are endeavouring to trace their connection to—disturbance of the spinal marrow.

We may consider these disorders, like those of the cervical or dorsal portion of the cord, as consisting in preternaturally increased sensibility or action, or in a diminution or loss of either. Among the former, we have pains in the sides or



abdominal parietes, colic, pain in the kidney or bladder, or uterus or ovarium, or in the spermatic cord or testes, pains in the joints or muscles resembling rheumatism or ulceration of the cartilages of the knee or hip joint. Again, we have cramps in the bowels or legs or feet, or we have diarrhœa, leucorrhœa, or menorrhagia. Among the complaints marked by loss of sensibility or power, is a sense of weight or fullness of the abdomen with flatulence, and, perhaps, obvious distention. This would seem to depend on loss of sensibility in the intestines themselves, and is generally connected with obstinate costiveness. It is the state sometimes induced by the administration of the carbonate of lead. There is another of the same nature in which the spinal nerves are those chiefly affected, denoted by diminished sensibility of the abdominal muscles. Such is the case with persons who feel as if their bowels were falling out, or with those who feel like the gentleman described by Mr. Abernethy, as if they had no bowels. We have also in the same class defective or suppressed secretions, and partial or total paralysis of particular muscles or organs. The following cases will serve to illustrate many of these singular affections.

LXXVI. Bridget Walsh, aged thirty, complains of pain in the back, from the middle down, worst at the sacrum, pain in the left side at the bend of the ribs, excessive tenderness of the serrati, intercostal, and lumbar muscles, pain in the left hip and knee, and sometimes in the shin or ankle. *The pains are brought on or violently increased by stooping or turning or straightening herself.* Pressure on the dorsal vertebræ from the middle down or on the lumbar gives pain but does not make it shoot forward. The general health was little disturbed.

LXXVII. Mary Speerin, aged twenty-four years, complained of great pain in the loins and hips, rendering it very difficult for her to walk. The pain extended down the right leg, and was excessively acute in the sole of the foot. The attack commenced about two months since, after a fatiguing walk at her brother's funeral, and has been occasionally more or less acute. She blistered above the knee with little relief. About a week ago she was affected with violent pain

at the anterior of the clavicle, as if in the bone itself. As it seemed to have commenced at the lower part of the back of the neck, she applied a blister there, which immediately removed it. On examining the spine, there was found tenderness of the last cervical vertebra, pressure on it producing an instant recurrence of the pain at the anterior of the clavicle, and there was also excessive soreness of all the lumbar vertebræ, and at the hollow space behind the right trochanter. Pressure on the lumbar vertebræ, brought on pain in the hip and side.

LXXVIII. M. H., aged eighteen, ill one year with pain over the crista of the left ileum, extending forward to the umbilicus; it was only occasionally distressing to her, *and was always relieved by lying down*. The menses have been suppressed since she first complained. There was tenderness of the middle lumbar vertebræ.

LXXIX. Mrs. L., aged fifty years, complained of extreme pain and soreness over the whole abdomen; exquisitely acute at the right side of the umbilicus. The pain came on in violent paroxysms; there was no thirst or feverishness; pulse eighty and feeble. On examining the spine, we found acute tenderness of all the lumbar vertebræ, especially the lower ones. On pressing them even lightly with the finger, she screamed aloud, and implored us not to touch that part again, as she could not bear it. She speedily recovered by the employment of purgatives and fomentations, and the application of a blister to the spine.

Instances of these abdominal pains dependent upon spinal disorder, might be multiplied without end. It is indeed scarcely probable that they could be absent in any case in which the lumbar portion of the cord or its membranes are severely affected. This is exceedingly well illustrated in rheumatic complaints of the spine, where neither the nature nor the seat of the complaint can be matter of any doubt. A gentleman stooping in dressing himself, to draw on his stocking, was seized with pain about the ninth dorsal vertebra, as if his back was broken, or the spinal column was dislocated at that point; he had some difficulty in getting to bed, and could not draw a full breath on

account of violent pain at the insertions of the diaphragm; the pain afterwards extended down the spine, affecting the lowest dorsal or upper lumbar vertebræ, but the chief suffering was from pain at the right side, close to the umbilicus, and a little lower. This continued in a very acute degree even after the pain of back and difficulty of inspiration yielded to blood-letting, anodyne liniments, and the volatile tincture of guaiacum. Though the patient was a medical man, and was aware the abdominal pain was superficial, arising from the morbid action at the origin of one of the spinal nerves, he had much ado at times to convince himself it was not deep-seated and in the bowels like colic. In fact he could not do so, if it was not for the undisturbed state of the digestive functions, and that the colic or pain was instantly brought on in a violent degree by the slightest unwary turn or twist of the spine. It was the last symptom of the rheumatic attack which yielded; and this naturally led him to consider, if the complaint had set in precisely in the form which it assumed towards its termination, how puzzled and probably deceived he would have been.

Dr. Pemberton, many years since, in treating of inflammatory affections of the kidneys, spoke of the sympathetic soreness in the abdomen with which they were often attended, as likely to lead to a misconception of the seat of disease; but it is obvious from what has been said, that both abdominal soreness, and pain in the situation of the kidney might exist, without the presence of any serious disease either there or in the abdomen, if the cord be in a state of disorder; and we venture to assert, no practitioner can in any doubtful or obscure case assure himself from the danger of mistake, who neglects an examination of the vertebral column.

Though these sympathetic pains are usually superficial, and seated in the abdominal parietes, it seems probable that true colic—a true spasmodic affection of the intestines through the medium of the ganglia of the sympathetic—might be occasioned by irritation of the spinal cord. This has been the opinion of many of the continental writers with respect to *colica pictonum*, but strong analogies may be

drawn from the affections incident to spinal irritation, which would lead us to conclude, that other morbid states of the spinal marrow, beside that apparently induced by lead, may excite spasmodic stricture of the bowel\*. We recollect to have met a very violent case of colic following an injury of the lower dorsal or upper lumbar vertebra by a fall. It was relieved by a large bleeding and by blistering the spine. As the man had however been affected with colic at former times, when no such injury had been received, a satisfactory inference could not be drawn from the facts stated.

Accompanying these painful affections of the abdomen, especially when they assume the form of griping, we frequently have diarrhœa; as in preternatural excitement of the kidneys we have a superabundant flow of water from the bladder. That diarrhœa may be brought on by an excited state of the cord, we have ample proof in its occurrence among a successive medley of complaints, in cases where there was no disease anywhere but in the spine—those of general irritation. We recollect a remarkable instance of protracted spinal disorder, in which pain and tenderness in the lumbar vertebræ alternated with a similar state of some of the lower dorsal or upper cervical. There was a corresponding change in the patient's complaints, from menorrhagia or diarrhœa with tenesmus, to sickness and pain of stomach, and eventually to distressing toothach. The following is the only uncomplicated case among our notes, and seems well marked.

LXXX. Margaret O'Donnel, aged 30 years, was attacked suddenly last week with diarrhœa and frequent pains in the bowels. She had been previously in good health. There was tenderness of the first or second lumbar vertebra. *Pressure on them brings on the pain in the bowels which usually attends the fit of diarrhœa.*

It is probable irritation of the lower dorsal portion of the

\* We may surely infer that colic might occur, as a single sign of disordered spine without previous complaint, when we find that it is not infrequent in those dreadfully prolonged cases of general irritation of the spinal marrow, in which there is a continual metastasis of morbid action from one organ to another.



cord may also occasion bowel complaint. We met some years since a singular instance of disorder resembling the Indian cholera, in which there was no affection of the lower dorsal or lumbar vertebræ, but the tenderness was considerable at some of the cervical and upper dorsal. The absence of tenderness lower down, would almost induce us to conclude this complaint was altogether one of the ganglionic system, and that the cervical and dorsal tenderness were incidental symptoms, not absolutely necessary to the case.

LXXXI. Hannah Donohue, aged 30 years, a nurse, was seized suddenly with violent pain and noise in the head, palpitation of the heart and sense of sinking, as if she was about to die. These symptoms were shortly succeeded by pain in the stomach and left side, with nausea, retching, diarrhœa, and distressing cramps in the legs. She has had the pain in the left side for years, and almost constantly for many months past. She has also been subject to what she calls an ague pain over the right eye, and rheumatic pains at the tops of the shoulders, and down both arms to about the middle. She says she sometimes feels as *if they would break with the pain*. Her bowels were not disordered previous to the present attack; her pulse is natural and the skin cool. There was great tenderness of the middle cervical vertebræ and of the fourth, fifth, sixth, and seventh dorsal. Pressure on the latter does not occasion or increase the pain in the side and stomach, but produces an indescribable unpleasant sensation there, with great and sudden feeling of oppression.

There can scarcely be a doubt that the foregoing symptoms were the result of nervous irritation, either affecting the spinal cord or ganglionic system; they occurred in a habit, evidently suffering from neuralgic attacks, and they for the most part presented their usual correspondence with tenderness of the vertebral column. If the present state of medical science permitted us to offer any satisfactory conjecture as to the nature of the Asiatic cholera, we should be strongly inclined, from the occasional phenomena attending spinal or ganglionic irritation, and from the symptoms which it in itself presents, to connect it with some peculiar morbid ac-

tion of these portions of the nervous system. The suddenness of the attack, the sense of sinking and constriction at the pit of the stomach; the insatiable thirst, purging, cramps, loss of voice, the failure of the pulse, of the secretions, and of the generation of heat, all clearly belong to some disordered state of the spinal cord and sympathetic nerves. Diarrhœa is generally one of the earliest symptoms, and cannot be accounted for by any state of the intestinal canal, which we can connect with an obvious cause, any more than the sudden purging brought on by fear or uneasiness of mind, which must be the result of a certain change or irritation induced in the spinal marrow or sympathetic ganglia, by the impression in the first instance on the brain. The powerful affection of the motor functions observable in cholera, would perhaps lead one to suppose the intensity of the morbid action prevailed chiefly in the spinal marrow. The cramps, the tremblings, the stiffening or spasmodic contractions of the limbs, and above all, the singular and frightful movements after death, would seem to denote more than mere symptomatic disturbance at the origin of the motor power\*.

Painful affections of the uterus, dependent upon irritation of the lumbar cord, are of much more frequent occurrence than any we have yet mentioned. The principal of these, hystericalgia, such as occurs soon after lying-in, we shall speak of in treating of spinal diseases resembling inflammation: but they occur also in a milder form, and of a less equivocal character, and are usually accompanied by some disorder of the bladder. Mr. Burns of Glasgow particularly points out the connection between sacral tenderness and painful com-

\* In a case related by Dr. Sokolov in the Russian official reports, he states, that twenty minutes after his patient's last breath, and when the corpse had been already washed and dressed, it was affected all at once with frightful movements. Convulsive motions took place in the hands and feet, like those excited by galvanism, commencing first in a few muscular fibres, especially in the neck and thighs, extending in a vermicular manner, and suddenly producing bending of the head and agitation and elevation of the feet. These spasms continued at intervals for ten minutes. On another occasion they came on as long as six or seven hours after the termination of the symptoms of the disease.

plaints of the uterus and bladder: and they may be found as occasional symptoms in almost all the cases of general irritation of the cord which we shall have to relate. We believe, however, that in many instances in which there is a morbid, though not an acute inflammatory state of the uterus, sacral or lumbar tenderness may be met with as a symptom. It is perhaps to be looked upon as such in most cases of dysmenorrhœa, as we have often observed the tenderness present only during the menstrual period, or if present at other times, worse during its continuance. Patients subject to dysmenorrhœa are also very often the subjects of general irritation of the spine, we cannot say whether as a cause or consequence. It is very probable, in the interesting cases of painful or irritable uterus, published by Dr. Gooch, tenderness of the lumbar vertebræ or sacrum would have been found, if an examination had been instituted, though we cannot venture from any experience of our own to connect them with an irritable state of the cord.

Menorrhagia and amenorrhœa are both less doubtful results of this state; the former is exceedingly common, and is frequently seen alternating with sickness or pain of stomach, headach, and epistaxis; it is needless to offer any particular instances. We may however mention, that in a case of the kind, in which there was no lumbar soreness, and but little at the sacrum, and where every means that could possibly be suggested was employed for weeks with but partial relief, a cure was permanently effected by blistering the sacrum. It was the most obstinate case we had ever met with in practice, and the blister was not resorted to until the most alarming debility, with blanched lips and swelled feet, had taken place.

Disorder of the bladder, resembling strangury, gravel, or stone, sometimes accompany painful complaints of the uterus, sometimes occur without them. In no disorder is the connection with the disturbed state of the spinal cord so evident as in these. A woman who was affected with tenderness of the lumbar vertebræ or sacrum, and complained of occasional difficulty in passing water, once informed us, "*that the gravel always attacked her when she caught cold.*"

In other instances this complaint will be found to come on especially when the mind is disturbed or depressed. We shall briefly detail the symptoms of a few cases.

LXXXII. Mrs. F., aged 40 years, married. Has had symptoms of gravel or obstruction, and pain in passing water, for the last month. Sometimes suffers exceedingly from it. She is very weak and nervous, with white tongue, and loss of appetite. Complains of a distressing feel of fright and hurry about her continually, for which she cannot account. She describes it as like the sensation a thief might have, when in danger of being caught in carrying off what he has stolen. She has suffered much lately from uneasiness of mind, but attributes her illness chiefly to *carrying heavy loads on her back*.

LXXXIII. C. M., aged 50 years, complained of pain, sometimes at the pit of the stomach, with oppression; sometimes at the anus and neck of the bladder, with difficulty of passing water, and painful bearing down of the uterus. The catamenia had ceased about nine months. There was tenderness of the lower dorsal and lumbar vertebræ, and very acute at the end of the sacrum. Pain is brought on at the anus, by pressure anywhere below the eighth dorsal.

LXXXIV. A young lady, who had previously enjoyed excellent health, fell gradually into an unaccountable state of delicacy. She complained of frequent griping pains in the stomach and abdomen. Her appetite fell away, her cheeks became sallow and chlorotic, and she was affected with general languor and debility. As there was no discoverable disease of liver, no disturbance of the digestive organs or functions of the uterus, the state of the spine was inquired into, and there was found extreme tenderness of the sacrum as low as the coccyx, to which she did not attach much importance, conceiving that it could have no relation to her present illness. This tenderness had existed, in a greater or less degree, for two years; but had lately become much worse, and annoyed her most whenever she took carriage exercise. The most remarkable feature of the case however was, that the slightest pressure on the tender part brought on an instant desire to evacuate the bladder.



She was at times troubled with pains or numbness in the lower extremities. All this lady's complaints were perfectly cured, in about five or six weeks, by the application of leeches, twice to the sacrum, and afterwards a blister, which was succeeded by painful boils. Internally, she had the carbonate of iron in large doses, with regular aperients.

Perhaps the cases spoken of by Mr. Burns, of Glasgow, in which symptoms of stone are met with where no stone exists, are, like the foregoing, dependent upon irritation of the cord. He does not say whether they are attended by spinal tenderness, but states that they most frequently occur with young girls previous to the establishment of the catamenia, or with women of an irritable habit. There is no organic disease; nor has he ever known it in such people, and in a diseased structure of the bladder or kidneys. He tried many remedies—such as soda, uva ursi, narcotics, antispasmodics, tonics, and the warm and cold bath—but could not promise certain relief from any one of them. In process of time the disease subsides and disappears. Cases of irritable urethra in both sexes often evince the same obstinacy of character, and admit the same conjecture with respect to their occasional dependence.

We have been anxious to ascertain whether the neuralgic affections of the testicle, of which Sir Astley Cooper has so fully treated, are connected with any morbid state of the lumbar cord, but have not met with a sufficient number of cases to admit of our drawing any accurate inferences on the subject. We shall, however, give one instance, in which the complaint was brought on by direct injury to the spine; and another, in which it may, we think, be probably referred to irritation of the spinal marrow from constitutional disposition.

LXXXV. Thomas Carty, aged 45, on exerting himself in lifting a heavy load, felt a glow of heat at the lower part of the spine, rushing from thence to every part of his body. He experienced considerable pain for some days in the spot where the glow of heat was first felt; and was then attacked by soreness and pain of the left testicle, so that he

could not walk without considerable difficulty. The pain extended up in the direction of the spermatic cord, and used sometimes to shoot up towards the kidneys; but though there was extreme tenderness, there was no swelling or redness of either the testicle or cord. The pain in the lower part of the spine had gone off, when the testicle became affected. At this time he applied as a patient at the Dispensary. Complaining only of the latter affection—as nothing material could be observed, except the soreness and pain—it seemed probable that the complaint depended on some affection of the lumbar or sacral nerves, a suspicion which was partly confirmed by the discovery of tenderness at the lower lumbar vertebra. Repeated blisters were therefore applied to the tender spot, upon which the pain of testicle and cord gradually subsided, and he was quite relieved. He continued well for a fortnight; when he again began to complain of pain at the sacrum, which grew very distressing, and was attended by slight tenderness of the testicle and cord. The same treatment was once more pursued with considerable benefit; but the complaint had not altogether subsided when these notes were taken.

LXXXVI. A gentleman, aged 30 years, complained of pain and extreme tenderness in the left testicle and spermatic cord; sometimes with increased heat of the part, but no swelling. It had continued for some weeks, varying in degree, but very troublesome. Reclining, or wearing the T bandage, gave relief after exercise, but were of no use when persevered in. Moderate exercise on horseback was not injurious, and sometimes seemed beneficial: but he was always much worse after fatigue; and what seemed singular, *after taking purgatives*. We had employed discutients, cold lotions, liniments, &c., without any relief. A dozen leeches had been applied, and bled profusely for six or eight hours; and, subsequently, the tartarized antimonial ointment was made use of. At length, tired out with unavailing attempts at a cure, he determined to give over all medical treatment, and return to his usual habits of life. In less than three weeks he found a very great improvement, and soon after perfectly recovered.

This gentleman had been attacked three or four times in his life with a painful affection of the supraorbital nerve, which was periodical, and relieved by bark and antispasmodics. He had also been the subject of a neuralgic complaint of the hip and knee; which, after having been treated for a strumous affection of the joints by eminent surgeons without success, disappeared, on his discontinuing the rest and reclination which had been enjoined him. This he was induced to do, on finding his right elbow, which was subsequently attacked in a similar way, rapidly recovered by gentle exercise. The whole history of the case led to the supposition, that the affection of testicle was, like all the former attacks, purely neuralgic, and probably connected with tenderness of some of the lower dorsal or lumbar vertebræ. This conjecture there was afterwards an opportunity of verifying in some measure. The gentleman was again attacked, in a slighter degree, with the pain and tenderness in the testicle and spermatic cord; and, on examining his spine, soreness on pressure was found about the second or third lumbar vertebra. He recovered, as he had done before, by mere attention to his general health.

Painful affections of the lower extremities are frequently mistaken for chronic rheumatism; and when affecting the joints, for still more serious maladies, as in the case just mentioned. Mr. Brodie relates some of these, in his work on Diseases of the Joints; and mentions, as a means of distinguishing them, that the affected parts bear rough or firm pressure well, though gentle handling excites considerable pain. A still more certain mark of distinction we think might be found, in examination of the spine. Almost all hysterical affections of the hip or knee are attended by tenderness of the sacrum or lumbar vertebræ.

We find it difficult to offer to the reader's attention any cases of diminished sensibility either of the abdominal parietes or contents; not only because they seem to be less frequent complaints, but that those which do occur very often escape the attention of the practitioner, or are very hard of detection. There can be scarcely a doubt, but that many instances of constipation, which from their obstinacy

are attributed to mechanical obstruction, arise from diminished sensibility alone. It is to this cause the constipation from the poison of lead has been attributed, and that dependent upon hydrocephalus and other cerebral affections. Dr. Abercrombie relates an exceedingly interesting case, evidently of this kind, in which, after the failure of all the usual purgatives, the peristaltic motion of the bowels was excited by galvanism, and a perfect cure effected.

LXXXVII. "A gentleman, aged 50, was affected with vomiting, and pain in the right side of the abdomen, which was hard, distended, and acutely tender to the touch. His bowels were obstinately costive, and resisted the action of the strongest purgatives, except when assisted by repeated and strong injections. Treatment upon this plan had been continued for a fortnight with very slight effect, when Mr. Clarkson, the gentleman in attendance, determined upon trying the application of galvanism to the part of the abdomen which was hard and tense. The application was almost immediately followed by copious evacuations from the bowels; and it was continued daily, for about ten days, with the same uniform result. After the application had been made for a few minutes, there usually commenced a commotion of the bowels with a rumbling noise, and this was soon followed by a copious evacuation. The evacuation sometimes did not take place till after the galvanism had been continued for about twenty minutes; but at other times the call was so urgent during the application, as to oblige him to suspend it, and allow the patient to retire. The tension and tenderness of the right side of the abdomen rapidly subsided, and in a few days every feeling of uneasiness was gone \*."

The success of the treatment in this case, and the effect of galvanism in supporting the action of the eighth pair of nerves on the respiratory organs, as evinced in Wilson Philip's experiments, ought certainly to induce a more general trial of it in all complaints where defect of the nervous energy, or what seems tantamount—diminished sensibility—is the chief cause of danger.

\* Abercrombie on the Viscera, p. 132.



Retention of water in the bladder seems also occasionally to occur from the same cause to which we have been attributing constipation. It is usually relieved by the use of diuretics. We were formerly much puzzled at the success attending the exhibition of diuretics in those retentions occurring in the course of typhus fever. It seemed very singular practice, when the bladder was distended with water, and none passing off, to give medicines which would seem likely to distend it yet more. It did not at once occur to us, that diuretics act as stimulants to the bladder as well as to the kidneys, and were therefore very likely to succeed in all cases of retention arising from mere diminution of its muscular power.

These affections, whether of the bowels or bladder, are however, in many instances, the effect of a total suppression of the usual secretions. Costiveness for days, and total suppression of water, are symptoms sufficiently common. The latter of these may possibly be sometimes the occasion of anasarca, but with either, the same remarkable difference that exists between functional and organic diseases in general is observable, the suppression of the natural secretions from irritation of the spine usually terminating favourably, while that dependent on structural disease is as frequently fatal. We may refer to the first case detailed in this work, in which, after prolonged suppression of water, a catheter was introduced, and the bladder found empty. The complaint did not seem to increase either the danger or the sufferings of the patient. This would not seem to accord with Sir Henry Hallford's opinions on cases of total suppression, which he says prove uniformly fatal. The system, he imagined, could not exist long, where there was a total obstruction affecting this emunctory. The following case, originating in injury of the spine, would render it probable that this supposition is only very generally true.

LXXXVIII. A young woman fell from the top of a very high stack of corn, and came on her back on some stones at its foot. She was soon after seized with pain across the small of the back, particularly about the situation of the kidneys, with constant nausea and vomiting. On the

seventh day, when she was for the first time seen by a medical person, she had some tumidity and tenderness of the abdomen, with slight swelling at the left side of the spine, and great tenderness of the lower dorsal and lumbar vertebræ. She had passed nothing either from the bowels or bladder since the accident. On introducing a catheter, about a dessert spoonful of limpid water was drawn off. She complained much of thirst; but as she could not keep the smallest quantity of food or drink on the stomach, she merely wetted her lips now and then with cold water. Her pulse was unequal, sometimes at 80, sometimes upwards of 100, within a few minutes, and very feeble. Her skin was cool. She had been blooded when the accident occurred. She now had purgatives, diuretics, enemata, but without the slightest relief. The purgatives were not retained on the stomach, and the injections produced no effect. On the ninth day she was affected with shiverings, coldness of the extremities, with clammy perspirations which had a urinous odour. The nausea was not so great, and she retained drink longer on the stomach. She complained urgently of the pain in the back and in the bowels, and there was great tenderness of the whole surface of the abdomen. The injections were continued, and the spine was rubbed with tartarized antimonial ointment. On the tenth day she was attacked with fits of oppression, a disposition to syncope, and occasional difficulty of deglutition. She retained on her stomach the small quantity of drink she had taken during the night; but the pain in the back and loins continued very torturing, and the abdominal tenderness was still considerable. The catheter was introduced again, and six ounces of limpid urine were drawn off. This was the first water which had passed for ten days, except two or three drachms which had come away on the former use of the catheter. A blister was now applied to the loins, and purgatives and injections were continued. A good quantity of water passed involuntarily in the bed on the succeeding night. On the twelfth day the purgatives acted for the first time, and she had three copious motions. She also passed about a pint of water naturally, began to ask for food, and

was allowed wine and broth, as her pulse was feeble, and there was an appearance of great debility. At night she was affected with sudden sense of sinking: she fainted twice within an hour; and even on recovering, her pulse was not perceptible either at the wrist or at the bend of the arm. She could not raise her voice above a whisper, and complained much of pain and distress in respiration. She had no motion, and passed no water since morning. By repeated doses of volatile alkali and wine, she gradually recovered a natural pulse and temperature; and a second blister having been applied above the former one, her respiration became easier. When the blisters healed, mercurial ointment was rubbed along the whole course of the spine. She had many recurrences of the weakness for some days; but notwithstanding several changes for better and worse, made a progressive amendment, and was perfectly recovered about the end of the third week from the date of the accident.

The last cases we have to consider, as belonging to a morbid state of the origin of the lumbar nerves, are those of weakness or total loss of muscular power in the extremities. They are to be met with in every degree, from tremulous debility to perfect paralysis. Of the latter, we can relate no cases from our own practice; but we deem it no slight corroboration of our views on this subject, that the late Mr. Abernethy, in illustrating the functional affections produced by disease of the digestive organs, has given some as striking instances of paralysis produced by spinal irritation as could possibly be met with. He was among the first of those discriminating men who rejected the notion, then universally received, that spinal tenderness, with weakness of the lower extremities, denoted disease of the vertebral bones. "Long," says Mr. Abernethy, "before my attention was excited to disorders of the digestive organs, I had remarked that there was a paralytic affection of the lower extremities, resembling that which is produced by disorder of the medulla spinalis, from disease of the bodies of the vertebræ, which also appeared to me to vary with the state of the patient's health. These observations led me to propose a



method of treatment, which proved successful in the cases of two young ladies who were affected in this manner. The issues, which had been ineffectually kept open in the back, were healed; and the state of the health in general was amended by country air, exercise, attention to diet, and a few simple medicines. The use of the limbs returned, as the health became established."

LXXXIX. "Another young lady, whose stomach and bowels were disordered in the manner already described, became gradually affected with weakness of the lower extremities, and pains in the loins. The pain became at length very severe, and was aggravated in a manner almost insupportable by the agitation of a carriage. This lady could scarcely walk; and gave a description of the state of her limbs so exactly resembling that which is sometimes consequent to diseases of the vertebræ, that I thought it right to examine the spine. *I struck with my finger the spinous process of each lumbar vertebra; and upon touching one in particular, the patient complained of great pain:* but pressure on the contiguous vertebræ also caused much uneasiness. Under these circumstances I placed a blister on each side of the spine, and kept up a discharge from the surface by dressing it with savine cerate. These means, with rest, relieved her sufferings; but, as her health declined, she went into the country, where she soon became much better. The blisters were now suffered to heal, and she shortly afterwards recovered so much as to take long rides on a rough-going horse. She returned from the country in good health, and was both muscular and fat. About a year afterwards she was so ill in the same way, that she wished to have issues made in her back; but I would not consent to this, from knowing that the bone could not be diseased. Of this relapse, however, she again got well, upon the amendment of her health in general. Since that period, she has been sometimes very well; at others, pale and emaciated: and these changes have corresponded with the healthy or disordered state of her bowels. This lady, who was uncommonly healthy and strong, except when disturbed by disordered digestive organs; and who, when so circumstanced, *had*



*rheumatism, dysury, and other local maladies*, which are in my opinion caused by such excitement, died about seventeen years afterwards, very unexpectedly, of constipation, which could not be relieved by the most judicious treatment. The body was not examined; but no doubt could be entertained of there having been mechanical obstruction, for just before her death a surprising extent of the bowels were protruded per anum."

Let this case of Mr. Abernethy's be placed beside any of those protracted instances of spinal irritation which we have related, and the resemblance must be at once recognized: the spinal tenderness, with its successive train of varying disorders—the weakness of the extremities—*rheumatism—dysury—and other local maladies*. That it depended on disorder of the digestive organs, as Mr. Abernethy supposed, we believe, from all the circumstances of the case, can scarcely be doubted; but similar affections of the spine, and similar consequences, might equally follow from other sources of irritation. The following affection seemed to owe its origin to suppression of the catamenia.

XC. Bridget Neale, aged 19 years, complained of weakness in the lower extremities, especially from the knees down—could not walk far—was troubled with pain about the sacrum on sitting down, or when pressure was made on it—could never remain long sitting—there was no tenderness at any other part of the spine. She was occasionally distressed by throbbing at the temples and palpitation, and sometimes with a sense of choaking or suffocation. The countenance was pale and chlorotic, the pulse quick and weak, the tongue clean, catamenia suppressed. Mild purgatives, and a blister to the sacrum, were ordered; after the employment of which the limbs became stronger, and the pain of sacrum on sitting down ceased. On the application of a second blister, the catamenia returned, and the girl made so perfect a recovery, that she could very soon after walk eight or ten miles without experiencing fatigue.

## CHAPTER V.

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### GENERAL IRRITATION OF THE SPINAL CORD.

We shall now give some cases, in which the tenderness or morbid state of spine was universal, that it may be seen how perfectly all its symptoms are made up of those belonging to disorder of its separate portions, and how truly they correspond in their immediate seat and nature with the situation of that point of the chain which happens to be most tender or painful. For even when there is universal soreness of spine, it will be almost always found that it is acute at a few of the vertebræ, and more or less obscure through the remainder. Besides this acute tenderness to pressure, there is also very usually a constant though variable pain, or sometimes sense of heat or burning, or mere uneasiness; and this we believe in by far the greater number of instances is felt about the seventh or eighth dorsal vertebra. This pain and the general soreness of spine are very indicative of a tedious and troublesome complaint. The most acute soreness is usually about the situation of the pain; and when the former shifts up or down the column, the pain, although it may not accompany it, generally ceases for the time. The pressing symptoms will in fact be found always more directly connected with the acute tenderness on pressure than with the pain, which, in many instances attended with strange and variable affections, is yet never complained of, except at the seventh or eighth dorsal vertebra. There is also, in these cases, a frequent disposition to relapse, without any very obvious cause, after considerable improvement; and often, when we have relieved the irritation at

one point of the spine, we shall find it has merely been transferred to another, as in the metastasis of gout or rheumatism—a tolerable proof of its frequent dependence on a general morbid disposition in the cord, and of the inutility in such instances of mere local applications, except as occasional adjuvants in the cure. As the first case detailed in this work is more strikingly illustrative of all the possible effects which it would seem the state of the cord we are describing might produce, than any other we could bring, we shall now select from our notes such chiefly as present some unusual or remarkable features. Among these, perhaps the most interesting are the instances in which sudden insensibility is brought on by pressing a particular spot in the spinal column.

XCI. Anne Hannan, aged 22 years, complained of pains in all her limbs and joints—pain at the sternum and sides—pain round the hips and in the whole length of the back, from the neck down. Her complaints were relieved by lying down; but were increased excessively at night, although lying in the horizontal posture. The catamenia, which had been suppressed for twelve months, returned since her illness. Her appetite was bad, and she complained much of debility. There was great tenderness of all the dorsal and lumbar vertebræ, but none of the cervical. Pressure at the upper dorsal occasioned pain at the middle of the sternum: from the third or fourth down to the sacrum it excited pain, not at the corresponding points as usual, but at the ensiform cartilage. Pain was even brought on in this situation by pressure behind the trochanter, or on the muscles of the thigh, or on the knee joint, or if she chanced to tread on uneven ground, or a pebble came beneath her foot in walking.

To ascertain whether the seventh or eighth dorsal vertebra was as usual more affected than other parts of the spine, we were induced to make rather firm pressure there; when she suddenly tumbled forward in a fit of insensibility, and would have struck her face against the floor, had she not been caught by a person who stood near her.

XCII. A lady, aged 30 years, complained of pain affecting

the left side of the face, temple, and neck, which she supposed to be something of *tic douloureux*, and which had annoyed her for two or three years. She had been occasionally subject, during the same period, to pain of side, to leucorrhœa, dysmenorrhœa, dysury, with bearing down pains and incontinence of water. On examining the spine, which she had no conception was at all affected, considerable tenderness was found about the seventh dorsal vertebra, and at all the lumbar; but on touching the second upper vertebral bone, which from the symptoms affecting the face and neck there was reason to suppose was also tender, she sprung up with frightful suddenness, as if a needle had been driven through the cord, and then as instantaneously fell back in a state approaching to insensibility. Out of this stupor she sprang twice with the same electric suddenness, and as often fell back powerless—her countenance during the moment evincing the utmost terror and agitation, and her respiration becoming heaving and oppressed. As soon as she could speak, which was at first in a broken, affrighted manner, she said that the instant her neck was pressed, her arms and all parts of her person above the ensiform cartilage felt as if suddenly numbed or paralyzed. There was a numbness and sensation as from the pricking of pins and needles, tingling through her face, jaws, temples, and arms, to the tips of her fingers. She had never experienced such a sensation before, and would on no account permit her neck to be touched again. As a proof of the functional nature of this lady's complaint, we may mention, that, although she adopted no regular plan of treatment, and did little for herself, her health did not become worse, and she afterwards married and had a family.

XCIII. A young gentleman described himself as suffering for some years with chronic liver-complaint. He had constant but variable pain in the right side, with general delicacy of health; and had taken blue pill and other medicines without relief. He had, however, derived considerable benefit from drinking the Liston Varna waters, which are strongly chalybeate. Some days since, he was seized with vertigo and loss of sight for a few minutes, accompanied by a thrill-



ing sensation down the arms, and followed by a slight attack of feverishness. It was relieved by purgatives.

Having strong doubts as to whether his liver was diseased, the right side was particularly examined. He complained of pain there, but there was neither hardness nor soreness. On examining the spinal column, although there did not appear to be any tenderness, the sensation of pressure was excessively disagreeable to him through its whole course. When the finger rested on one of the dorsal vertebræ, he grew pale and terrified, and would have fainted if the pressure had been continued. He felt no pain, but a sudden indescribable sensation or thrill through every nerve in his frame, which was inconceivably horrid. He shuddered at the idea of permitting a repetition of the pressure, and had an unpleasant feeling about the part for the remainder of the day. When a few weeks had elapsed, however, he allowed another examination, and with precisely the same results.

XCIV. Thomas Looney, aged 12 years, was attacked with violent pains in the abdomen, about the sigmoid flexure of the colon, at the umbilicus, and in the pit of the stomach. These pains came on two nights before, and recurred five or six times since: they are so violent as to make him scream out, and generally end in fits of fainting or insensibility. His pulse was 85, rather hard; his tongue whitish; and he had occasional headach and thirst. Pressure on the second, third, and fourth cervical vertebræ, which were tender to the touch, brought on the headach with excessive sharpness, particularly at the brows. The dorsal were also tender to the touch, pressure on the upper ones occasioning corresponding pains in the chest; and on the lower, the pain in the stomach and umbilicus. On moving downwards in the examination, and making pressure on the second lumbar vertebra, he fell forward, as if he had been shot, into the lap of a girl who sat opposite to him, and was taken up in a state of insensibility. While in this state he was laid on his back, his countenance natural, but his breathing scarcely perceptible, when he suddenly sprung up into a sitting posture, and after breathing short for some moments, recovered

perfectly. The pressure which produced these effects was very slight; and on continuing the examination, by passing the finger very gently over the spine, they were repeated when it reached the second lumbar. The quickness with which he started into the erect position was as extraordinary as the suddenness with which he fell. There was no appearance of gradual amendment: he sprung at once from insensibility to life, as if by the stroke of a galvanic battery; and the cup of cold water which a little girl was presenting to his lips was dashed from her hands, before she was sensible of his recovery. This boy was perfectly relieved in a few days by bleeding, purgatives, and the application of a blister to the lumbar vertebræ.

We met once with a case of general irritation of the spine, which was still more singular than any we have related. There was universally diminished sensibility of the skin; and the patient's great complaint was, that *he felt as if he had a cover all over his body*. There was tenderness of the whole spine, pressure on any of the vertebræ inducing corresponding pain in front. He had a sense of weight all down the spine, as if he had constantly a load on his back; and he had numbness of the feet and hands. His general health was disordered. He suffered from pyrosis, gastrodynia, headach, oppression, and weakness.

Dr. Brown has noticed the remarkable alleviation of all the symptoms, in several cases of spinal irritation, on the appearance of erysipelatous inflammation. We shall offer two instances, which may perhaps be said to illustrate the fact; but we think it very probable, at least in the first one, that the fever was from the commencement erysipelatous, and that the eruption, like that of measles or small-pox, was its necessary termination. The case is curious, as contrasted with the one just related — preternatural sensibility of the surface forming one of its most striking symptoms, as diminution of sensibility did in the other.

XCV. Mrs. —, aged 32 years, was seized with acute pain and tenderness all over the abdomen, with excessive sickness of stomach, and retching; threw up quantities of yellowish bile; had violent throbbing headach, with soreness of the

scalp; pain in the back, round the hips, and down the limbs, with such excessive sensitiveness or soreness of the skin all over the person, that the slightest touch was painful; even the pressure of one limb resting on the other as she lay on her side was scarcely bearable: the pulse was full and frequent, the skin dry and burning, the bowels confined, the water deficient and high-coloured: had been ill two days. On examining the spine, there was found extreme tenderness of all the lumbar vertebræ and sacrum. It was slight in all the dorsal and cervical, except the second upper one, in which it was very acute, pressure there exciting the pain at the brow. She was purged with epsom salts, combined with small doses of the dilute sulphuric acid, and had nitre whey. On the night of the following day, an erisypelatous blush appeared on the inner side of the left leg, with considerable swelling; upon which all the violent symptoms of her disorder abated. The sickness of stomach and retching quite disappeared, the soreness of the abdomen and limbs was considerably lessened, and the spinal tenderness was diminished everywhere. Blisters had now formed on the inflamed parts of the leg, the inflammation ceased to spread, and there was no more pain in it. She was quite well in a few days, except that the headach and tenderness at the second cervical vertebra remained. She had, however, been seldom free from headach for a long time, and was very subject to numbness and occasional pains in the limbs, which were apt to come on, especially when stooping over her writing-desk.

XCVI. John Pickett, aged 45 years, was attacked with quotidian ague, which after a time assumed a remittent form. He recovered slowly, and gradually fell into a nervous desponding state, attended by sudden fits of sinking and oppression. On examining the spine, we found extreme tenderness of the whole column; and although he had not previously been affected with cough, the slight pressure made in examining the upper dorsal vertebra brought on such violent fits as he did not remember to have had for fourteen years. These fits of coughing continually recurred on any repetition of the pressure. His pulse was 80, and natural;



his skin cool, his tongue moist and whitish, he had no thirst, his appetite was bad. Some days after this he was seized with retention of water, accompanied by excessive pain, but there was not much appearance of fulness above the pubes. The anus next became the seat of irritation and pain, especially when the bowels were about to be moved, but the tenderness of spine had latterly quite disappeared. The case ended in erysipelatous inflammation and abscess in the perineum, on opening which, he was freed from all his complaints.

The next cases we shall offer are perhaps interesting, chiefly as instances of the transference of disordered action from one part to another, as the tenderness shifted its situation in the spine.

XCVII. C. Williams, aged 68 years, suffered for some time with slow nervous fever, in the course of which he was attacked with headach, cough, oppression, and frequent fits of syncope, or sense of sinking approaching to it. He was continually supported in the bed at night by pillows, and often felt as if he was going to die. He was sometimes affected with general shiverings, like ague, which were followed by perspirations; and suffered much from pains in his limbs, especially in the shoulders and arms, shooting down to the fingers. These were at one time so severe, that he almost lost the use of his arms from them, and even since his recovery has never been able to shut the right hand or contract the fingers close. During all this period of his illness there was extreme tenderness of the cervical and dorsal vertebræ. He was now, however, seized with excruciating pain in two of his toes; the agony of which kept him without peace or rest, and was sometimes hardly endurable. On examination it was found that the tenderness had almost totally left the cervical and dorsal, but was extremely acute in the four lower lumbar vertebræ.

XCVIII. Mrs. M'Grath, aged 40 years, lately a nurse, suffered for some time with symptoms of gastro-enteritis. She had exquisite tenderness in the region of the stomach, with white furred tongue, thirst, and constant vomiting on taking the smallest quantity of food or drink. Although there was



great pain and soreness of the dorsal and cervical portion of the spine, which suggested a probability that the case was dependent on spinal disorder, it was thought advisable to treat it by leeches to the stomach, blistering, and a mild unstimulating diet. There was however little relief from these remedies, the blistering alone seemed to give some ease, but the symptoms eventually subsided under the use of small opiates and tonics.

In about three weeks after her recovery we were suddenly sent for to see her, with a request to make great haste, or she would not live until we reached the house. She was found in the utmost torture, screaming with pain; but obtaining ease at intervals, so as to be able to give an account of her ailment. The pain was in the uterine region, where there was some degree of fulness, and in the lower part of the back; there was some tenderness on pressure of the abdomen, which was always increased on the accession of the pain. She was affected with a distressing sense of forcing down when she sat on the night chair, and with difficulty and pain in passing water. She had no appearance of feverishness, and had experienced no relief from repeated doses of castor oil. The complaint had now lasted in a torturing degree for several days, and was becoming worse.

On examining the spine, the tenderness was found to have left the cervical and dorsal vertebræ, and to have fixed itself most acutely in the lumbar vertebræ and sacrum down to the os coccygis.

She obtained speedy relief from large doses of opium combined with calomel, and blistering the sacrum.

We shall conclude these cases of general irritation of the spine, with a more detailed history of one which may serve as an instance of the very various and strange complaints it may successively give rise to in an individual.

XCIX. A lady, aged 40 years, of a pale delicate person, a short time previous to her confinement, was affected with general œdema to an alarming degree, accompanied by headach, palpitation, tightness of chest, oppression, and a burning feel at the epigastrium. These symptoms were re-

lieved by blood-letting, and completely removed by her delivery, which took place at the close of the year 1828. It was attended by hysterical convulsive twitchings and dangerous sinking for some hours. Before leaving her bed, she complained of violent pain shooting from the back to the sternum, whenever the infant was put to the breast. It always continued for some time, and was brought on by sitting up long. The recumbent position, and discontinuance of nursing, seemed to remove it; but there remained a tired feel, weakness in the back, want of appetite, and debility, which were after a time followed by pain under the left breast, and a recurrence of the palpitation. The frequent complaints of the back, and inability to sit up long, led to an examination of the spine; and there was found, on pressure, excessive tenderness of the seventh or eighth dorsal vertebra, especially at the left side. There appeared to be some slight prominence; to which, however, no importance was attached. Leeches and blistering were used without any material advantage.

The pain afterwards shifted to the right side, was often felt in both, and was generally more acute than the pain of back. She sometimes described it rather as a sense of constriction, than pain; or compared it to the feeling one might experience from a walnut pressed within a tight belt. It almost always came on in the afternoon or evening, and usually continued until midnight, but with a very variable degree of acuteness.

Weeks elapsed in this way, without any obvious change; but the nervous system became gradually more irritable, and successive trains of symptoms occurred, which were not always easy of relief. She began to complain of some soreness and tightness of chest; and, on examination of the spine, great tenderness was now discovered at two other points, the second cervical and the fourth or fifth dorsal vertebra; pressure on either of which excited instant coughing. The pain of side, too, at whatever time of the day it occurred, came to be attended by severe fits of oppression, with feverishness and palpitation. Occasional headach was complained of for days, at times intense, accompanied by

determination to the head, flushed face and brow, and throbbing at the temples. Having, in the early part of February, suffered from this a good deal, the cervical vertebrae were again examined, and the tenderness was so great about the second or third, that she had an uncomfortable feeling in the neck, from the slight pressure, for the whole day afterwards; and at night, when retiring to her room, felt a sudden rush of blood to her head, and dropt into the arms of a lady, on whom she was leaning, in a fit of insensibility. She lay for some time perfectly still, as in a state of syncope; but the cheeks and brow were flushed and hot, and the temporal arteries and carotids throbbing. Handkerchiefs, dipped in vinegar and water, were wrapped round her head, and in some time she awoke with a startled, agitated look, complaining of a sense of trembling (not palpitation) at the heart, and a burning heat in the head, hands, and feet. These fits of insensibility afterwards frequently followed the throbbing headach, especially after any exertion, as walking or dressing, and often alternated with acute pain of side and oppressions.

In the latter end of the spring, a new train of symptoms set in. After a slight inflammatory attack of lungs, for which some blood was taken, she became affected with a sensation as if a hair, or something of the kind, was stretched across the throat, which, after a time, grew very distressing. It was accompanied by a short troublesome cough, and eventually by a feeling of enlargement of the tongue and palate. This was suddenly followed by extreme difficulty of swallowing, with constant anxious efforts and convulsive action of the muscles of the throat; respiration became shrill, croupy, and difficult; and, when the fit reached its height, seeming imminently to threaten suffocation, she fell back in a state of quiet insensibility, out of which, after some minutes, she sprung up to repeat the paroxysm. There was a strange suddenness in the recurrence of sensibility on these occasions, an electric starting from the still lifelessness, with a wild, hurried, incoherent manner, which to her friends was excessively alarming, and was occasioned, as she afterwards informed me, by an

apprehension that her complaint was hydrophobia. To that dreadful disease, indeed, in the extreme nervous excitement, the difficult deglutition and dread of swallowing, the violent convulsive spasms in attempting it, and the affection of the respiratory system, the whole attack presented a perfect and terrific resemblance. It was relieved by antispasmodics and opiates; but weeks elapsed before the sensation in the throat completely left her.

In some time after, she became affected with periodic headach, which was very violent, but yielded in a few days to the sulphate of quinine. This was succeeded by extreme coldness of the whole person, especially of the feet and hands, and a return of headach. This was now very intense, affected chiefly the right side of the head, and was attended with flushing and throbbing of the right temple. In the evening, after the application of a few leeches, blood burst from the nose, and the hemorrhage continued for some days, occasionally diminished or interrupted by the use of astringents. The headach, though at first relieved by the loss of blood, seemed aggravated by the excessive flow; the pulse became small, hard, and jerking; the determinations more frequent, and attended by noises in the ears, ringing, and an aching hammering that was scarcely endurable. All these symptoms were removed by antispasmodics, tonics, and astringents, and an occasional blister to the neck. The bleedings from the nose were not long suppressed, however, when menorrhagia occurred, which seemed likely to renew all her distress. After this she was attacked by pain in the bowels with diarrhœa. Both complaints yielded, though slowly and with occasional returns, to a continuance of the astringents and tonics. There was now some improvement of the general health; and, on a change of air, which was recommended, it became more obvious and decided. There seemed to be an arrest of the constant disposition to metastasis, and the frequent developement of new symptoms: and those which remained, as the pain of side and back, and the evening feverishness, were not so wearing and unendurable.



We have brought the history of this case down to the present period. The treatment, which has been partly passed over in the details of the case, that a more uninterrupted view might be given of the successive symptoms, consisted chiefly in palliating those which were most distressing, quieting the nervous irritability, and endeavouring to restore tone and strength to the general habit. The digestive organs were particularly attended to, and reclination was persevered in until within the last few weeks, when she was occasionally permitted to sit up during the day. Carriage exercise brought on headach, pain of side, and oppression; and, after a few trials, was therefore relinquished. The tender points of the spine were repeatedly leeches and blistered, with temporary relief; and eventually small caustic issues were made at each side of the vertebra, where the pain was first complained of. These were of very little use to the side, and proved so extremely painful and irritable, that they were soon allowed to heal up. In short, every plan of treatment that the complaint could possibly suggest, was tried without success. The sulphate of quinine, or carbonate of iron, never gave relief to the pain, and usually excited feverishness; and the exhibition of narcotics, if we except henbane and opium, seemed quite as unavailing. We had, indeed, ample evidence of the fact admitted by all medical writers who have met with the disease in its severer forms, that medicine has little or no direct influence over it. It requires an unusual confidence in the powers of nature, and no very limited experience, to allay our apprehensions, notwithstanding the certainty of recovery in the ordinary run of such cases, and the surprising instances which have occurred in the very worst. But in all tedious, intractable complaints, not necessarily connected with organic changes, the danger to be apprehended is chiefly from the supervention of diseases to which the system is already predisposed, and to which a new liability is created by the protracted weakness and irritation.

In concluding this case, we may remark some circumstances, which, though not given in its history, were very singular. The left side of the person was always colder than the right, and this was particularly observable when the

right temple or brow was attacked with flushing and head-ach—a remarkable proof of the intimate relation between the developement of animal heat and the nervous influence. There was also, very generally, a great coldness of the extremities, which sometimes induced a regular rigor. There was often an instantaneous change of voice, a sudden weakness and hollowness of tone, without any obvious cause, and occasionally fits of syncope from very slight exertion. At one time, this lady, who was a very talented and refined observer, gave me an account of a change in the oppression affecting her, which was singularly illustrative of the metastasis from one portion of the respiratory system to another, so frequent in these irritative disorders. She usually, she said, felt oppressed, from a tightness or difficulty in the lungs themselves; but in this instance the lungs were free, and all her distress seemed to arise from an impossibility in expanding the walls of the chest: she could not sufficiently elevate the ribs, as in ordinary respiration. On another occasion, after a short fit of laughter, she was seized with a troublesome incessant cough, which lasted many hours, and was at last quieted by opiates. Similar attacks of cough were often brought on by any sudden affection of the mind, or by pressure on the cervical or dorsal vertebræ. Subsequent to her suffering so severely from the intense headach, she described an extraordinary feeling she was for some time annoyed by: a desire that every thing should be said or done with an extravagant rapidity. When a person spoke, she thought they ought to speak infinitely faster; when they advanced towards her, their movements were disagreeably slow; and when walking herself, though unable to do so without some support, she felt hurried, and desirous of precipitating herself onward. This feeling, it will be remembered, occurred also in Case XVI, and was one among many not particularized in the first case given in these Papers. It was a functional affection of the sensorium, of which we have the similitude in its organic diseases. We were lately taking blood from the temporal artery of a young boy attacked by acute hydrocephalus, who, during the whole operation, had it to an extravagant degree: he kept continually crying out, “Hurry,

mother! hurry, I tell you! can't you be quick? — there! — what are you doing? — hurry!"

The periodic headach with which this lady was occasionally affected, sometimes came on gradually at a certain hour in the morning, increasing until it was almost unbearable. On other occasions, when the hour arrived, it struck through the temple like an electric shock in its utmost intensity at once. When an attack of this latter was at one time treated with large doses of the carbonate of iron, the pain did not recur; but at the usual period of its accession, she was seized with sudden and complete deafness. She recovered her hearing in the evening, and totally lost it again at the exact moment next day. The deafness was so great in these attacks, that the loudest sounds were inaudible; and the patient's chief distress arose from the frightful sense of persons and objects moving about her with the most profound noiselessness. Under the use of the carbonate of iron, the fits of deafness became daily of later occurrence, and were less in degree. In a few days she was perfectly recovered.

## CHAPTER VI.

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### SPINAL IRRITATION RESEMBLING INFLAMMATORY OR FEBRILE ATTACKS.

A CASE which occurred in the Clinical ward of the Edinburgh Infirmary, during our attendance there, gave a particular interest to our inquiries into the nature of complaints which simulate inflammation. A young woman was brought into the ward with, it was supposed, inflammation of bowels. She was bled very largely, and had, I believe, large doses of opium, with but little alleviation of the symptoms. On the second or third day, however, globus hystericus and other nervous symptoms supervened, which induced the attending physician to adopt an immediate change of treatment. In his subsequent Clinical lecture he stated, that hysteria sometimes so perfectly imitated an attack of inflammation, that it was absolutely impossible to distinguish between them. He recommended it therefore as the safest rule, in all doubtful cases, to consider and treat them as inflammatory, until some symptoms occurred which clearly marked them as hysterical. Of the prudence of this recommendation, under such circumstances of admitted difficulty, there could be no question; but the difficulty itself is, after all, not the less discreditable to our pretensions in diagnosis, and the alternative is certainly not always free from danger. It unfortunately happens, that temporary relief generally follows even the free use of the lancet in hysterical or nervous affections, although the complaint is eventually rendered more obstinate, and the disposition to relapse is increased by it. But in the broken, delicate habits in which



such disorders frequently occur, it must be obvious the evil consequences cannot always be limited to a mere aggravation of the malady. Indeed all physicians of experience will readily acknowledge, that large depletion, in these cases at least, must frequently lead to irreparable mischief. The lady, Case II, nearly lost her life by the repeated abstraction of blood and by purgatives; and there is a case precisely similar, related by M. Jolly, in his *Essay on Visceral Neuralgiæ*. The patient had a succession of attacks resembling gastritis, hepatitis, nephritis, hysteritis, &c., each of which gave way for two or three days to the usual depletory measures; but the intervals of relief were short and imperfect. When at length reduced to the most extreme state of weakness and emaciation, the sulphate of quinine was administered in large doses, and the recurrence of the paroxysm prevented.

The perplexity in which practitioners are frequently involved in the treatment of these simulated diseases, when they find them go on all the worse by the antiphlogistic plan, is well illustrated in cases which occasionally appear in the medical periodicals. We may refer to some published by Mr. Newstead, we believe in the *Medico-Chirurgical Review*, as apparently of an inflammatory nature, yet unrelieved by depletion, and cured by means unadapted to an inflammatory state. We have already ventured to conjecture, that much of this perplexity might be avoided by an examination of the spine, on the presumption that spinal tenderness almost always attends the simulated disease, and seldom, if ever, the true inflammation. Since first this idea occurred to us, we have been investigating its truth with much interest; and have every day had further evidence of its utility in determining the diagnosis. We have met with tenderness of the spine in no case of pure inflammation, if we except instances of apparent inflammation of liver, and a fatal one of what seemed to be acute peritonitis after delivery, in which there was excruciating soreness of the lumbar vertebræ and sacrum. As in this last no examination was permitted, we are very doubtful of its inflammatory character. The patient might possibly have died from the

mere intensity of pain and irritation, as those persons have been supposed to do, who, in states of high inflammation, have expired suddenly, and not by any of the usual modes in which it terminates. Both Dr. Brown of Glasgow, and Mr. Teale of Leeds, state, that they have frequently met with spinal tenderness associated with acute affections of the liver; but although similar instances have occurred in our own practice, we are yet very doubtful whether the diagnosis was in those cases correct. It seems improbable, that inflammation of liver should be capable of inducing a state of the spinal cord, which inflammation of no other organ could occasion, while we know that irritation of the dorsal spine may so affect the liver and parts about it as to simulate inflammation. We have in fact sometimes fallen upon cases, in which we supposed the liver was affected; but their progress afterwards undeceived us. Whatever future experience may determine on this point, however, it will not much militate against our assumption, if it prove in all other respects true.

In order to form a correct diagnosis in suspected inflammatory cases, it would be necessary to recollect, that in local injuries, irritation is sometimes transmitted from the extremities of the nerves of an inflamed part to their origins in the spinal cord, and in such circumstances we necessarily have spinal tenderness. In this way, perhaps, inflammation of liver may occasionally excite it also, and of course make an exception to what we have considered a general law. The transmission of irritation from parts in a state of high inflammation is however, we believe, rare; while its transmission from a part in a state of irritation is of daily occurrence. Hence it is, that, in inflammation of the jaw from accidental inflammation, we rarely have constitutional symptoms; but in dentition, which is a state of irritation and not inflammation, we have vomiting, purging, cough, croup, convulsion, &c. Hence, in gonorrhœa, all the symptoms are confined to the neighbourhood of the inflamed membrane; but in the introduction of a bougie, which occasions irritation only, we have perhaps rigors or syncope. The same is true of the intestines. Violent inflammation occasions symptoms di-

rectly related to the parts inflamed; but the irritation of a worm excites frightful convulsions. Were we to attempt any explanation of these extraordinary facts, we might say, that the intensity of action and sensation in an inflamed part engages the nervous influence too powerfully to admit of distant minor effects; while the peculiar and less engrossing disturbance, the mode of sensation, if it be such, which constitutes irritation, is merely sufficient to act as an excitant to the central nervous masses. They seem, in short, to depend on the same law in the system, to which Dr. Whytt and Professor Alison have referred sympathetic actions, and on the admission of which we can understand why irritating the fauces with a feather, or the mucous membrane of the nose with mustard, should excite nausea, retching, or sneezing, when painful inflammation of these parts cannot produce such effects.

There may perhaps be another source of fallacy in forming a diagnosis, besides the occurrence of spinal tenderness as a consequence of inflammation in peculiar habits — the possibility of its existence previous to the inflammation. This may merit consideration, but is not of very great importance; since, as we have heretofore mentioned, pure inflammation is not at all common in those nervous or hysterical habits in which spinal disorders so readily occur.

Although we could scarcely offer any cases in illustration of these pseudo-inflammatory attacks so appropriate as Case II, in the Introductory Observations, we shall transcribe a few from our note-book, illustrative of such as are most frequently met with in practice.

C. Mrs. Guerin, aged 40 years, complained of pain in the right side, at the pit of the stomach, and top of the shoulder. She had feverishness, thirst, and whiteness of the tongue. There was excessive tenderness in the hepatic region. There was also some tenderness at the pit of the stomach and left side. The pain came on in violent paroxysms. On examination of the spine, there was great tenderness from the eighth to the twelfth dorsal vertebra, and a lesser degree from the first to the eighth. The cervical and lumbar were all perfectly free. Pressure on any



of the vertebræ, from the first to the fifth or sixth, produced pain in front above the mamma, from the sixth to the ninth below it, from the ninth to the twelfth at the sides, in the region of the liver, and above the umbilicus. She finds it easier to lie on the left than on the right side.

This case, like many that have been already given, shows how little mere hepatic pain, with excessive tenderness and fever, can be depended on as indicative of inflammation. Immediate recovery took place, on treating it as an attack dependent on spinal irritation. There were circumstances, it is true, which in this instance might have disclosed the nature of the complaint without an examination of the spinal column. The inflammatory fever bore no proportion to the extreme tenderness of liver. The pain was not constant, but occurred in paroxysms. The anxiety of countenance and manner which attends severe inflammation were absent. There was uneasiness in lying on the affected side and not on the opposite one; and on pressing in the situation of the liver, a sensation such as precedes fainting was induced, not the acute pain arising from pressure on an inflamed part.

In an accurate consideration of the symptoms of these complaints, such discrepancies may perhaps generally be detected; but sometimes the most experienced practitioner will find himself involved in doubt and difficulty.

There are no persons so liable to pseudo-inflammatory attacks, as hysterical females after their delivery. The uterus, especially, seems so much disposed to them, that it is probable as great injury has been sustained by frequent misconception of their nature, and consequent mistreatment, as could at any time have arisen from the opposite error in true inflammations. The three following are very obvious instances of hysteralgia; but they are not always met with in so unequivocal a form.

CI. Mrs. O'B —, aged 30 years, in four-and-twenty hours after a good delivery, was attacked with acute pain and tenderness in the uterine region; with frequent pulse, hot skin, and thirst. There was great pain of back, and bearing down, no expulsion of coagula, and partial suppres-



sion of the lochia. The affection was not preceded by any obvious rigour. There was excruciating tenderness of the lumbar vertebræ and sacrum on pressure.

CII. Mrs. A. C——, in twenty-four hours after an easy delivery, was seized with a violent shivering fit, followed by acute pain and tenderness in the uterine region; with frequent hard pulse, hot skin, white tongue, and excessive thirst. There was also severe pain of back and bearing down, occurring in violent fits, without expulsion of coagula, and attended by great depression and weakness in the intervals of ease. The tenderness of the lower part of the abdomen was so great, she could scarcely bear the gentlest touch; but she could stretch down her limbs freely. The lochia were suppressed. There was most excruciating tenderness of the lumbar vertebræ and sacrum.

Both these cases were speedily relieved by fomentations to the abdomen and back, by purgatives, and by opiates with diaphoretics.

CIII. Mrs. —, of a delicate, nervous habit, and long under medical treatment for the cure of general constitutional weakness with various hysterical affections, was many months ago attacked with a sudden fit of insensibility, in which she fell to the ground, frothing at the mouth. She recovered in a few minutes, and became quite well. A short time afterwards, she was one day seized with a sudden and involuntary fit of laughter, which terminated in a state of insensibility like the former attack. It soon went off, but left a slight weakness of the right arm, which, however, gradually wore away. About the time that these affections commenced, she became pregnant, and went through her time; suffering much from dyspepsia, heartburn, and general debility. After a natural labour of eighteen hours' duration, and the delivery of the placenta, she had internal hemorrhage, with pallid countenance, cold clammy sweats, chilliness, and an almost imperceptible pulse at 156. It ceased on the extraction of several clots with the hand; but the debility continued to an alarming degree for several hours. She had large doses of laudanum, with dilute sulphuric acid through the night, which

seemed to relieve her much ; but in the morning, the debility was still great : the pulse was weak at 130, the features sunk, and the respiration much hurried. On the following day she seemed better ; but the pulse was yet at 130, and feeble. In the evening she had a severe rigor, and soon after was attacked with pain and tenderness in the uterine region, excessive pain in the head, brow, and eyes, with sickness of stomach and vomiting. There was thirst and heat of skin, and the pulse became rather hard at 140. The tenderness on pressing over the uterus was considerable, the pain constant, and the lochia diminished. She had calomel and extract of henbane. She was afterwards fomented, took diaphoretics, and on the succeeding night felt quite relieved. The lochia and secretion of milk became abundant, and the pulse soft at 125. After the lapse of some days, she was up and well.

In this attack, as in the foregoing, there was tenderness of spine. We need not tell the experienced practitioner how dangerous it would have been, had these cases been treated by free blood-letting, connected as they always are with irritability of the nervous system, and that peculiar state of it consequent to profuse floodings. All of them might have been, perhaps, sufficiently characterized, without reference to the spine, by the suddenness of the symptoms, the absence of any continued anxiety or distress of countenance, and a freedom in the movements of the lower extremities not common in acute abdominal inflammations. But it requires no inconsiderable degree of tact and experience to decide absolutely, in all instances, merely on these considerations. We have twice seen a valuable life lost, from erroneous treatment in such attacks ; once from blood-letting, and in the second instance from repeated purgatives.

Where these simulated inflammations, however, are not consequent to large losses of blood, the state of irritability with which they are connected is sometimes moderated by a small bleeding : it nevertheless ought not to be done without a due consideration of the constitution, and an attention to those circumstances pointed out by Dr. Marshall

Hall as useful in regulating the quantity to be taken away \*. It was perhaps of use in the following case, although it did not give any effectual relief.

CIV. Mrs. H., aged 48 years, of a full habit, but rather leuco-phlegmatic and pale, was attacked with violent pain in the stomach and bowels, which was constant, but grew much more violent at intervals. The greatest pain was about the ascending and transverse portion of the colon; but it was also very severe in the ileum. The pulse was hard at 110, the tongue white. There were thirst, heat of skin, headach, and disposition to sickness of stomach. There was also some oppression, with pain in the chest, and hard, dry cough. The parts affected with pain were very tender to the touch. There was tenderness of the cervical vertebrae, especially of the third, pressure on which brought on the pain in the brow with much severity. Pressure upon the lower cervical and upper dorsal brought on a catching of the breath, and oppression. Pressure on the ninth dorsal, and down as low as the first and second lumbar, instantly brought on the pain in the abdomen with intolerable severity. About twelve ounces of blood were taken from the arm, a calomel bolus followed by diaphoretics was administered, and a blister ordered to the back. She appeared very little better during the next two days, and had not applied the blister. On the third night she allowed it to be put on, and was exceedingly relieved. The pain of abdomen was afterwards only occasional. The pulse fell to 80, and she got refreshing sleep. The only medicines subsequently made use of were mild aperients, and the patient was well in a few days.

\* See Dr. M. Hall's Observations on Bleeding in the Erect Posture.

## CHAPTER VII.

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### CASES RESEMBLING THOSE OF SPINAL IRRITATION, BUT UNATTENDED BY SPINAL TENDERNESS, AND PERHAPS REFERABLE TO IRRITATION OF THE GANGLIA OF THE SYMPATHETIC NERVE.

WE sometimes meet with instances of functional disorders, resembling in most respects those already described, in which, however, no tenderness of the spinal column can be detected. The prominent symptoms in these usually belong either to the brain, or to the organs supplied by the ganglionic nerves, as the lungs, the heart, the vascular system, or the viscera. And whether to consider these in the former cases as examples of cerebral irritation, and in the latter of irritation of the ganglia of the sympathetic,—or whether, in both, they may not be the result of a different morbid action in the spinal cord, not developing itself at any time by tenderness of the vertebræ,—we seem to have no means of deciding. If we could believe that all affections of parts supplied by *the nerves of relation* were strictly diseases of the cerebro-spinal system, and those of parts deriving their nerves from the visceral or sympathetic ganglia were as strictly to be considered diseases of those ganglia, the distinction would appear to be simple and obvious. We should only have to ascertain whether the functions disturbed belonged to the organic or to the animal life, and connecting our observations with the seat of the accompanying pain, we should at once have it in our power to pronounce upon the exact portion of the nervous system affected.

But this could only be done on the adoption of Bichat's assumption, that the ganglia are the centres of the nervous



influence of organic life; and that as affections at the trunks of the spinal nerves are always referred to, or induce disturbance at their minute extremities in the distant parts they supply, so affections of the ganglia are chiefly denoted, not by symptoms referred to themselves, but by the disturbance of the organs to which they distribute nervous filaments. There are several considerations which would seem to render this opinion of Bichat's wholly untenable\*.

1. The organic or vital functions seem to be as independent of the ganglionic nerves as of any other portion of the nervous system, although influenced through them. We infer this from the facts, that the ganglia may be cut and torn, without any obvious derangement of the parts they supply; that cartilage, bone, ligament, cellular substance, membrane, intestine, may be formed, where no brain, or nerves, or heart, exist†; and that, as has been remarked by Professor Alison in his late admirable work, "secretion and nutrition are phenomena observed much more generally in nature than any vestiges of nervous matter—*viz.* not only in those animals where no nervous system has been detected (which must be allowed to be a doubtful case), but in the whole vegetable kingdom."

2. No sensations seem to originate in the ganglions, nor do these oppose any obstacle to the transmission of impressions or influences from the spinal marrow to the viscera, or from the viscera to the spinal marrow. This is proved by the experiments of Le Gallois and Wilson Philip. The latter distinctly shows, that physical impressions or injuries affecting the brain or spinal marrow to any extent, influence the motions of the involuntary muscles, and may even totally extinguish them; and considers the ganglions of the sympathetic "as channels through which the influence of every part of the brain and spinal marrow flows, to be bestowed on the abdominal viscera, on the vessels, and on all secreting surfaces."

\* Magendie says, "Should all the ganglions of the neck be removed, and even the first thoracic, no sensible derangement would follow, not even of the parts into which their filaments can be traced."

† Lawrence on Monsters.—*Medico-Chirurgical Transactions.*

But even supposing the ganglia of the sympathetic were the nervous centres of organic life, they are nevertheless capable of being influenced by the brain and spinal marrow; and the diseases of the latter may, on the grounds just stated, disturb the functions of organic life precisely in the same mode and degree as disease of the former. This is well illustrated in many organic affections of the spinal cord, and in the effect of mental impressions which act through it, not only on the heart and arteries, but on all the secretions\*. It seems, therefore, not possible, from a mere consideration of the relation of the symptoms to the organic or animal life, to determine whether they have their source in a morbid state of the spinal marrow, or the ganglia of the sympathetic.

M. Jolly tells us, that the visceral neuralgiæ are distinguished from the external or spinal by the greater severity of pain in the latter, and its occurrence for the most part in the evenings; while in the former it is worse in the morning, and becomes mitigated in the evening. Bichat seems to have observed this distinction, but attributes the difference of pain to a difference in the nature of the affection. Others have supposed, that it is sufficiently accounted for by the fact, that the visceral nerves, in their healthy state, do not feel in the same manner as the cerebro-spinal do. But how little weight attaches to this supposition will be obvious on reflecting that the portio dura, which is a motor nerve, and in its natural state cannot feel at all†, is said to be the subject of one of the most painful diseases to which the human body is liable. For our own part, how-

\* On the heart, in anger, exciting violent palpitation. On the bowels or kidneys, in fear, inducing diarrhœa, or profuse flow of water. On the liver, as in grief, occasioning jaundice, &c.

† Is the portio dura really ever the subject of tic douloureux? Or has it been erroneously supposed to be the seat of it, instead of the branches of the fifth pair? It seems singular, since the late discoveries in physiology, no physician should have expressed either doubt or astonishment at the accounts of a motor nerve, which has no power of transmitting impressions to the brain at all, becoming the seat of most torturing pain.

ever, we cannot pretend to say that the observation with respect to the difference of sensibility in the two classes of nerves, when in a state of disease, is correct at all. We have seen colics, essentially nervous, and which M. Jolly would refer to disorder of the ganglions, occasion as intense pain as is usually complained of in similar disorder of the spinal nerves. At all events, *the degree* of pain in any disease can be scarcely looked to with confidence as a means of diagnosis.

We should perhaps involve ourselves into as little error as is possible with our present limited information on the subject, if we merely assumed that the sympathetic ganglia must be, like all other parts of the nervous system, subject to disorder; but that as they are beyond the reach of examination, and their disorders are denoted by symptoms very analogous to similar affections of the spinal marrow and sometimes of the brain, we can only be assured of their existence by the negative evidence, that these parts of the nervous system are unaffected. Cerebral affections, however they may sometimes resemble those of the cord or ganglions, or of individual nerves, have very usually some one or two symptoms peculiar to them. And those morbid states of the spinal marrow so frequent in hysterical subjects, which are most liable to be confounded with disorders of the brain or ganglions, are generally denoted by a considerable disturbance of the nerves of relation, as well as those of organic life, and always by spinal tenderness. This last symptom can only by mere assumption be considered an effect of ganglionic disease, while we have direct proof of its absolute dependence occasionally on some disturbed state of the origin of the spinal nerves, in the facts that in some cases there is no disturbance of any of the viscera, no disorder whatsoever of the system, except what relates to certain of those nerves; and in others the tenderness is the obvious consequence of injury done to some part to which nerves from the spinal cord are distributed. The absence of this tenderness therefore, viewing it as a symptom proper to functional affections of the spinal marrow, gives us tolerable assurance that it is exempt from disorder. Whether the



complaints belong to the nervous system at all, we cannot from other considerations be at a loss to determine. The neuralgiae of either class, according to M. Jolly, have in common a preceding malaise, nausea, chilliness, some præcordial anxiety, an accompanying irritation, and an afflux of blood, with or without febrile action, a determination in perspiration or sedimentous urine, and finally intermissions between the paroxysms. In both classes of nerves, he says, the diseases yield to the same therapeutic means, and generally leave no cognizable trace after death, either in the nerves themselves, or in the organs to which these nerves are distributed.

We shall now give a few cases illustrative of probable ganglionic and cerebral irritation. They are, we believe, all that we have met (amidst so many of the neuralgiae) which were unattended by spinal tenderness.

CV. M. O'D—, aged thirty years, a nurse, was taken ill some time since with cough, sore throat, and feverishness; after the subsiding of which she became affected with œdema or puffing of the whole body, but especially of the face and neck. She had hot skin, whiteness of the tongue, thirst, and loss of appetite. She had frequent oppression with nausea, and disposition to vomit. Soon after the occurrence of the swelling, which was in about ten days from the commencement of her illness, she was attacked with pain of stomach and abdomen, and a hot burning pain, as she described it, within her; but there was no tenderness on pressure. This attack was followed by great difficulty in passing water, with excessive pain in attempting it; and she was occasionally affected with difficulty of swallowing, and a sensation resembling the globus hystericus. Not the slightest tenderness of any of the vertebræ could be detected. The swelling subsided within fifteen or eighteen days, but the other symptoms continued more or less for nearly four weeks, and seemed to be little influenced by any remedies employed except purgatives. From these she always obtained very considerable temporary relief.

CVI. Having been sent for suddenly one day to see a young woman, who it was said was dying, we found her just



recovered from what was called a fit of fainting, her countenance pale, languid, and covered with a clammy moisture; her skin cold, her pulse feeble at 80. She had been attacked by these fainting fits for the last four or five days, with little interval, each fit continuing for two or three hours. She now complained of distressing headach and soreness of the scalp, with uneasiness of the stomach and great debility.

On more particular inquiry, it was found that these faintings were not such in reality, but fits of insensibility, such as are usually met with in hysterical habits, attended by throbbing of the carotid and temporal arteries, with burning heat and flushing of the face and brow. They commenced about a week since, immediately after the occurrence of a universal efflorescence of the skin, which lasted a few hours. On recovering from the fit, her respiration always became distressing, and continued so for a short time; and her person became cold, especially in the extremities. She suffered also from a sensation in the throat which rendered deglutition difficult. There was not the slightest tenderness at any part of the vertebral column.

CVII. M. W., aged twenty-four years, unmarried, complained of great debility and depression of spirits, with frequent palpitation of the heart, and internal tremblings or shiverings. These sensations were at times so distressing as to oblige her to leave her bed at night and walk into the open air. She was frequently affected with pains shooting through every part of her person, to the ends of her fingers and to the tip of the nose; her pulse was small, rapid, and fluttering; her countenance had a purplish flush, her appetite was bad, and the catamenial flow scanty. She had no cough, oppression, pain, or indication of internal disease. She had been ill for two years, and suffered so much, that she was totally incapable of employment, and passed her life most miserably. Medicines directed to the improvement of her general health—tonics, antispasmodics, the shower bath, sea bathing—were all successively tried without the slightest advantage: no remedy that could be devised was of any avail. She had never had the slightest tenderness of the spinal column.

These cases are, it is obvious, but repetitions of many which have been heretofore given, with the exception of the absence of the symptom just mentioned, and frequently of any affection of the spinal nerves. We sometimes meet with instances in which these nerves become very much engaged in the progress of the complaint, where they were not at all so at its commencement. Whether the early stage should be considered as a state of cerebral or ganglionic irritation, it is often exceedingly difficult to decide. We looked upon the following case for a considerable time as one of organic disease of the brain, though its progress and termination proved its relationship with the class of irritative disorders.

CVIII. Miss ———, aged twenty years, early in the year 1829, after suffering from headach for some days, found her left eye becoming blind. It appeared as if a dirty cloud or mist was between her and every thing she looked at. She had been frequently subject for some months to pain of stomach, extending round at the margin of the ribs, not increased on pressure or on inspiration. She also sometimes complained of pain at the lower part of the back stretching round the hips. There was not the least tenderness of the spinal column, but twisting it, as in bending to either side, or stooping, gave her immediate pain. She had aperients, was bled, and had a blister applied to the neck, with very great benefit. A singular affection took place when the blister was nearly risen, and which had never occurred before. A pain seized her suddenly, first in the right hip and then in the left, shooting down to the knees and ancles, and with such extreme violence, as to deprive her of all power of moving her limbs. It abated after some hours, and then left her altogether. A blister was subsequently applied behind the left ear, when the same pain recurred in the hips and knees, but in a much lighter degree than before. The case went on in this way for some weeks, the young lady suffering much at times from sickness and pain of stomach, pyrosis, and pain of side. At length the sickness of stomach became constant in the morning, and was attended with singing in the ears, and some pain of head.

She was also often affected with pain down both arms, from the shoulder to the elbow, especially in the right; the eye in the mean time became quite well. In the month of March her general health began to be more disturbed than usual, her pulse was 90, her tongue yellow, her appetite bad, she had some thirst, and was nervous or easily excited; the head became worse, she had continual noises and reeling, with sense of weight at the crown, and the sickness and acidity of stomach with pains down the neck and arms continued. In May the left eye became again affected, and she was seized with a numbness of the *right* leg, which left her in a day or two. There remained, however, a feeling of weight in that leg when walking, and pain in the hip and knee, and both limbs were so weak, that if she bent the knees much, as in curtseying, she could scarcely recover herself. Soon afterwards she was troubled by a sense of fulness about the abdomen and a numbness, such as she used to complain of in the limbs. These various symptoms alternated with one another throughout the winter with little intermission. In the spring she was free from the amaurotic affection, vertigo, and numbness of limbs, but was frequently attacked with the pain of stomach in sudden severe fits like colic, and also with very acute pain over the right hip, extending up towards the middle of the sternum, about the shoulders and arms, and in the lower limbs. Towards the latter end of the summer, she for the first time had hysterical symptoms; her pulse became quick and irritable, she was affected with palpitations, fits of crying, and the globus hystericus. Now also for the first time tenderness of the spine was detected. On pressing the third cervical vertebra her stomach grew instantly sick and she almost fainted. The complaint afterwards went on like other instances of spinal irritation, and seemed eventually to wear itself out. She made a tolerable recovery at the end of the second year of her illness.

There are cases occasionally met with, in which, although the spinal cord and not the sympathetic nerve is obviously the seat of the disorder, no spinal tenderness exists, unless as in the foregoing instance they are protracted for a long



time. The nature of these cases is very obscure, and seems to differ from the state which has been described as one of spinal irritation. The symptoms in which they differ most remarkably is, that in the former, while there is no tenderness of the vertebræ, there is often excruciating pain in bending or twisting the spine; while in the latter the freest motion is generally accomplished without uneasiness, but the spinal column is acutely sore to the touch. The following are instances, although not so well marked as some we have met with.

CIX. B. H——, aged thirty years, was twelve months complaining of soreness of the muscles of the neck and constant pain in the left side, from the margin of the ribs to the hip. Pressure on that side or bending the spine to the right increased the pain considerably; bending the neck forward brought on a sense of uneasiness about the middle of the back, *but there was no tenderness in any part of the spinal column.* Though a complaint of long standing, it had not affected her general health, and was evidently a case of neuralgia.

CX. Mary Costello, aged thirty-three years, a nurse, complained of pain all down the spine and at the end of the sternum, diverging to either side; not relieved by the horizontal posture, and excessively aggravated when she attempted to lift a weight or bend the back as in stooping. Whenever she bent she said she felt as *if her heart would break* with pain, and if she turned inadvertently in the bed at night would scream with agony. Has been obliged to wake her husband to remove the child from one breast to the other, or to turn or change her position in bed. Was subject to severe and sudden fits of oppression, with tightness across the chest, and sometimes to tremblings, debility, and headache; her lower extremities have been affected with numbness and weakness for the last two years, so that she has been badly able to walk. These complaints were of three years' standing; there was some tenderness at one or two points of the vertebral column, but which appeared to have occurred only in the advanced period of her illness, as it did not correspond with those parts where the excruciating



pain was felt on bending or twisting the spine. Her illness commenced with pain in the head and giddiness, or vertigo, "*as if she drank spirits.*" She had applied several blisters to her back at first without any benefit, and had taken purgatives; latterly, she had done very little for herself. She was now directed to blister portions of the spine successively, from above downwards, to take regular mild purgatives, and a preparation of iron daily; under which treatment she made a perfect recovery in the course of a few months.

CXI. ———, aged forty-five years, about two years since felt her left side gradually becoming weak and numb; she was then attacked with pain in the neck, at the right side, which after some time terminated in abscess. Twelve months ago, pain attacked the opposite side, and another abscess was the consequence. The symptoms however continued unrelieved, and eventually the side became still weaker. She could not lift a weight with her arm, or walk straight, or arise from her chair without great pain and difficulty. She now complains of pain in the neck, down the spine, and in the hips, thighs, and knees; when she gets up too quickly out of her chair, she feels "*as if her thigh bones were broken.*" There is not the slightest tenderness of spine, although the pain is felt in the course of it; throwing back her head communicates a sense of relief. Her general health is tolerably good, but she has a fluctuating tumour at the right loin, nearly twice the size of her head. It seems to have a hardness in the centre, and has been coming on she says for eight or ten years, but never reached any considerable magnitude until last spring, when it increased rapidly. We have not been able to learn the progress of this case.

In concluding our observations on those neuralgic disorders which are unattended by spinal tenderness, we must not omit noticing some more frequently met with than the class just spoken of. In these cases the spinal nerves are always the seat of the affection, and the only respect in which they seem to differ from the common state of spinal irritation is, that there is not only no tenderness in any part

of the spinal column, but there is no pain induced by the freest motion in the spine, as in bending or twisting of the trunk, nor by lifting weights. To this we may we believe add, that the pain is usually periodical, which is not so often the case in irritation of the spinal cord. These are the cases in which, probably, the sulphate of quinine has been employed with success; although it will not always be found to answer, even where the periods of attack are very distinct and regular. The following are instances of these affections.

CXII. Mrs. ——— was seized with violent pain about the sacrum, hips, and thighs, and subsequently in the calves of the legs and toes. It was of so distressing a nature that she could not rest a moment with it, but was compelled to be up and walking the house the whole night. The pain was not present at the same moment in all these parts. At one time it continued in the hips and thighs for some hours, at another in the legs or toes; the parts which were freed from the pain for the time feeling weary and sore. It came on generally about 3 o'clock in the day, continued severely for the night, and abated towards morning. She made use of the carbonate of iron, sulphate of quinine, henbane, purgatives, liniments, and fomentations, without advantage. The warm bath gave some relief, and opium usually procured some sleep; but neither remedy prevented the recurrence of the pain on the succeeding day. A large blister was at length applied to the sacrum, and on the next day there was no return of the pain; but, singular to say, at the usual hour of its attack, her legs were affected with an uncontrollable restlessness, and she was forced to keep up a continual sort of kicking motion with them as she sat in her chair. This, however, eventually subsided. There was not the least tenderness discovered either in the spinal chain or sacrum throughout the attack.

## CHAPTER VIII.

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### CASES OF ACUTE SPINAL INFLAMMATION.

INSTANCES of acute spinal affections of a very alarming character are sometimes met with, which we have strong reason to suppose have a rheumatic origin. They resemble very much the disease which Dr. Abercrombie has described as meningitis of the cord, at least the earlier stages of it, and are evidently connected with some state of acute inflammation. We are disposed to consider it as of a rheumatic nature, chiefly because, in all the cases we have had, there has been eventual recovery, however long or tedious the illness, without our having resorted to depletion to such an amount as pure inflammation of so important an organ would require. Any cases of pure meningitis, of equal violence, which we have read of in the medical periodicals, almost invariably terminated in suppuration within the sheath of the spinal canal, or in ramolissement of the cord. We may also mention, as additional reasons, that the membranes of the cord are no doubt liable to acute rheumatic affections, as well as the serous or mucous membranes of other parts; that these are exactly the description of symptoms we should expect from such affections; and, finally, that we have found them benefited by the use of colchicum.

CXIII. S. M., aged 13 years, was complaining for ten days of pains resembling rheumatism in the back and limbs. Her tongue was white, her pulse quick and small, and she had no appetite. The pain of the back, although she had been freely purged, now increased to a dreadful degree; yet the pulse was still small and rapid, and there was no heat of skin. There seemed to be, however, a slight disposition to subsultus in the tendons at the wrist. Twenty ounces of blood were taken from the arm with considerable relief. Some days after, she suffered from pain and tenderness of the abdomen, with difficulty of passing water, and could not move her lower limbs: it gave her extreme pain when they were moved by another. On examining the spine, we found great tenderness of all the lower dorsal vertebræ. There was after this a recurrence of the pain in the dorsal and lumbar portion of the spine to a great degree, and once or twice complete retention of water, with swelling above the pubes, which was immediately relieved by saline purgatives. The tenderness of the abdomen still remained; there was some thirst and heat of skin; the pulse was 120, and feeble; and she could not move the lower limbs. She now began to suffer excruciating pain over the sacrum and coccyx. She could no longer lie on her back as before, and she had incontinence of urine. The treatment was such as is usual in cases of the kind — purgatives, fomentations, anodyne liniments, opiates, and the application of blisters and tartarized antimonial ointment to the spine and sacrum. She also had much of the acetum colchici all through her illness. The most obvious benefit she derived, however, was from the repeated blistering. To this remedy chiefly she seemed to owe the recovery of the power of moving her limbs and of retaining her water. She was almost perfectly well at the termination of the sixth week from the commencement of her illness.

It seemed exceedingly singular, that, while she was yet ill, her sister, who was by a year or two younger than her, became affected precisely in the same way she had been at the beginning of her illness, with violent pain resembling



rheumatism in the back and limbs. She was, however, so immediately placed under active treatment, that the progress of the complaint was interrupted. She was well in a few days.

CXIV. A young lady was attacked with excruciating pain at the lower dorsal and upper lumbar vertebræ, increased at intervals to a most dreadful degree. She could not move her lower limbs, and suffered much when they were moved by others. She had difficulty and pain in passing water; her skin was somewhat warmer than natural; her tongue white and moist; but the pulse was very little accelerated. She recovered perfectly, in about three weeks, by the use of fomentations, purgatives with colchicum, opiates, and stimulating liniments. She was not blistered. The lady's friends were much alarmed in this case at the total paralysis of the lower limbs.

CXV. Mrs. S—, ten days after her lying-in, went abroad, and sat on the damp grass in the heat of the day. She felt a sense of coldness at the time — “the cold go through her,” as she expressed it, and she returned in. She was that night seized with a violent rigor, followed by pain in the lower part of the spine, chiefly in the sacrum, which increased rapidly to an intense degree. It was constant, but, like the pain of colic, aggravated at short intervals to a degree beyond all endurance. She used to shriek with agony in the paroxysm, so as to be heard in the neighbouring fields; and, in reply to the remonstrances of those about her, declared that her suffering was nothing in comparison when she lay in with her first child. She described every recurrence of the fit as worse than a woman's last pain. In the intervals she lay on her back, with her knees up, uttering low complaints; and if the limbs were only touched, only moved one hair's breadth from their position, a loud wild scream announced the return of the pain. She had tenderness of the hypogastrium, and retention of water for some hours. All these distressing symptoms were very much abated by a large bleeding, fomentations, and purgatives; and the cure was effected in a fortnight or three weeks by

blisters, colchicum, opiates, &c., as in the preceding cases. The heat of skin was, all through the complaint, very inconsiderable.

CXVI. M. D——, aged 24 years, unmarried. Catamenia suppressed three months; suffered for some time with distressing pain in the back, sides, abdomen, hips, and knees. The pain of the abdomen came on sometimes violently, like colic, and was often accompanied by dysury. She had excessive tenderness and pain at the eighth, ninth, and tenth dorsal vertebræ, and in almost all the lumbar. She screamed if they were pressed hard, and could not turn, without much difficulty, in the bed at night. Her complaints were considerably relieved by leeching, blistering, and opiates. She continued ailing, however, for some months; but was eventually cured by the hot salt-water bath.

We shall conclude these cases with one of pure inflammation from injury, which terminated fatally. The history of such attacks is interesting, in declaring to us not only the usual but the possible symptoms which may arise from disturbance of the functions of the cord. But here it seems particularly so, in offering us an opportunity of comparing them with those of the acute attacks which we have just detailed.

CXVII. John Kelly, aged 36, a labourer, sprained his back about the situation of the upper lumbar vertebra, in lifting a load; complained of pain there for a day or two, and then took to his bed; became hot and feverish: was attacked with pains in all his limbs; with pain of chest, hard cough, and bloody expectoration. The joints were subsequently affected with excruciating pains, especially those of the lower extremities. He had extreme pain in the back, could not turn in the bed or elevate or move his lower limbs, or even bear to have them touched without screaming. The knees and ankles were slightly swelled, but neither red nor hot; the arms were little affected. He had no medical attendance, and went on suffering exceedingly, for some weeks, much in the manner described. He grew visibly worse from day to day; had much headach, thirst, and fe-

verishness; raved violently at intervals, and sung or whistled or talked incoherently when left to himself; but when roused, or his attention was arrested by any one, he became at once perfectly collected. His eyes were bloodshot, his cheeks sunk and hollow, his person emaciated, and he was finally attacked with diarrhœa. He gradually sunk, apparently worn out. His left lower extremity was swelled a little when he died. No examination was permitted.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

A	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	1	Anne Lynch.	19	1 week.	.....	Regular.	All the cervical.	Headach, sickness of stomach, white tongue, thirst, pressure behind the mastoid process excites pain at the brow and forehead.
	2	James O'Brien.	14	1 year.	.....	.....	All the cervical.	Headach, soreness of the scalp, especially at the crown, deafness.
	3	Margt. Marshal.	.....	.....	.....	.....	Upper cervical.	Headach.
	4	Bridget Burns.	45	9 weeks.	Married.	.....	All the cervical.	Pyrosis and vomiting.
	5	Patrick Burns.	32	4 weeks.	.....	.....	1st cervical.	Great pain in the vertex and brow, occasional vertigo, had an apoplectic fit, and died in a few days.
	6	Mary Shehan.	18	2 weeks.	Single.	Suppressed	All the cervical.	Constant headach, appetite impaired.
	7	James Casey.	40	2 weeks.	.....	.....	3d and 4th cerv.	Frequent fits of sinking and disposition to syncope.
	8	M. Fitzgerald.	14	3 months.	Single.	Not appeared	2d and 3d cervical.	Fits of insensibility.
	9	Nancy O'Brien.	35	2 weeks.	.....	Regular.	3d upper cervical.	Numbness of the fingers extending up the arm and neck to the mouth, difficulty of speaking, sickness of stomach, headach, fits of insensibility.
	10	Margt. Downs.	32	6 months.	Single.	.....	2d cerv. left side.	Paralysis of left arm, with sleepy numb sensation, attributes it to a sprain in the neck, cured by blistering the tender part of the spine.
	11	Margaret Coree.	25	1 week.	.....	Suppressed	All the cervical.	Cough and oppression.
	12	James Hennessy.	40	.....	.....	.....	7th cervical.	Cough and oppression, attributes his complaints to drawing heavy loads on his back.
	13	Cath. Burke.	.....	.....	.....	.....	3d cervical.	Continual noises in the ears, tenderness behind the mastoid process, pressure there occasioning pain in the anterior part of the scalp.
	14	Lawrence Toole.	60	.....	.....	.....	2d and 3d cervical.	Great oppression, general loss of feeling in the skin, frequent micturition, itching of the skin.



15	Mrs. —	35	1 year.	Married.	Regular.	3d cervical.	Stiffness and rigidity of the muscles of the neck, numbness of the arms.
16	Kate Sullivan.	37	2 weeks.	Married.	Regular.	All the cervical.	Headach, cough, dyspnoea, prolapsus uteri.
17	Mr. —	20	2 weeks.	.....	.....	Five upper cervical.	Violent pain and soreness in the crown of the head, brought on by pressure of the affected vertebrae.
18	Mrs. —	45	2 years.	Married.	Regular.	1st, 6th, and 7th cervical.	Symptoms resembling angina pectoris, headach, croup, fits of vomiting, with violent spasmodic pain of stomach, no tenderness on pressure there, cough.
19	Joan Bryan.	35	1 week.	.....	.....	2d and 3d cervical.	Constant pain down the left arm, pain between the shoulders at the left side of the spine, headach, soreness of scalp, faceach in the branches of the fifth pair of nerves.
20	Anne Day.	30	.....	.....	.....	All the cervical.	Distressing headach, hoarseness, general debility, nausea and vomiting, pains in her bones, attributes her complaint to carrying heavy loads on her back.
21	Mary Kirby.	20	.....	Single.	.....	Cervical vertebrae.	Hesitation and difficulty of speech, with partial loss of sight and amaurotic symptoms, occurring soon after delivery.
22	Margt. Nealon.	22	.....	A nurse.	.....	2d, 3d, 4th, 5th, & 6th cervical.	Pain in the left side about the fifth rib, tenderness of stomach, flatulence, relieved by blistering the spine.
23	Rody Hogan.	33	2 years.	.....	.....	2 lowest cervical.	Pain in right eyebrow, cheek, and lower jaw, slight ulceration and muddiness of cornea, pain worse at night, so as to keep her awake and screaming.
24	Kitty Hanly.	14	6 months.	.....	Not appear <sup>d</sup>	3 upper cervical.	Great pain round the left shoulder, in the left pectoral muscle, and in front at the clavicle. Pressure at the sixth cervical sends the pain sharply into the shoulder.
25	Mary Casey.	60	5 days.	.....	Ceased 30 years.	All the cervical, but especially the 6th.	Pain in the left shoulder and in front towards the mamma, occasional oppression, pressure at some of the upper dorsal excites uneasy sensations in the chest.
26	James Gilliard.	18	3 weeks.	.....	.....	All the cervical, but especially the 7th.	Hunger, faintness, and eventually pain of stomach soon after eating, tenderness on pressure at the stomach.
27	Mary Howard.	33	4 weeks.	.....	Regular.	The upper cervical, but especially the 2d.	

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

B	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	1	Ellen Barrett.	24	1 week.	Single.	.....	1st cervical, 6th or 7th dorsal.	Headach, pain at the stomach, globus hystericus.
	2	Pat. Galvin.	45	1 year.	.....	.....	2d cervical and 5th dorsal.	Pain at the stomach, pyrosis, pain under the margin of the ribs.
	3	Mrs. ———	45	3 weeks.	A widow.	Regular.	1st and 2d cervical, 8th dorsal.	Weight and constriction of the chest, pain at the stomach, fits of sinking, palpitation, suffocation at the throat; at another time, pain of neck, chest, sides, and arms.
	4	Judy Ryan.	38	.....	A nurse.	.....	Middle cervical, middle & lower dorsal, sometimes transferred to lumbar.	Fits of headach, languor, oppression, pain of left side, sudden sense of suffocation, croupy breathing, sometimes pain of back and dysury.
	5	Han. Donohue.	30	1 week.	A nurse.	.....	Middle cervical, 4th, 5th, 6th, and 7th dorsal.	Vomiting and diarrheea, sense of sinking, has had pain in the side for years.
	6	Susan Purcell.	20	4 months.	Single.	Regular.	Middle cervical, and from the 7th to the 11th dorsal.	Headach, pain of stomach, sense of fulness in the abdomen, weakness of lower limbs.
	7	M. Shaughnessy	20	.....	.....	.....	Middle cervical, middle & lowest dorsal.	Choking, globus hystericus, oppression, pain of stomach, cholick occasionally.
	8	Mrs. ———	40	.....	A nurse.	.....	Middle cervical, 7th dorsal.	Stiffness of muscles at right side of the neck, increasing suddenly at times, and attended with hoarseness and dimness of sight, headach, soreness of stomach, pain of chest.

9	Cath. McMahon.	50	5 weeks.	.....	Ceased.	Upper and lower cervical, upper and 8th and 9th dorsal.	Headach, followed by pustular eruption, pain at the cardiac region increased by inspiration, cough, oppression, occasional vomiting, dyspepsia.
10	Miss ———	16	.....	.....	Never ap <sup>d</sup> .	Cervical, and 9th dorsal.	Distressing headach, sickness and pain of stomach and left side, loss of appetite, pressure on the ninth brings on the pain of left side.
11	Mt. Marshall.	20	10 days.	Single.	Regular.	5th cervical, 9th dorsal.	Pain in the vertex of the head, the brow, and at the stomach; pressure on the fifth cervical brings on the former, on the ninth dorsal the latter.
12	Mary Blackall.	23	.....	.....	Suppressed	All the cervical, 9th dorsal.	Pain in the brow and at the stomach, occasional vomiting.
13	Mary Caugney.	21	.....	Single.	.....	2d and 3d cervical, & upper dorsal.	Headach, daily fits of insensibility lasting from one to four hours, occasional pains in the bowels and head precede the fit.
14	C. McNamarah.	28	.....	Single.	Profuse and occurring every three weeks.	All the cervical and dorsal.	Pain in the vertex, brow, and stomach, with fits of insensibility, thirst, feverishness; pressure on the ninth dorsal brings on pain severely at the stomach.
15	Marg. Denham.	27	3 months.	Single.	Regular.	1st cervical & 8th dorsal.	Cough, oppression and pain of stomach, disposition to syncope on pressing any part of the spine, but especially on pressure at the two tender points.
16	Wid. Kenertney	50	1 week.	.....	Ceased.	1st cervical & 8th dorsal.	Headach, noises in the head, cough, oppression, pain under left breast and at the pit of the stomach.
17	Mary O'Brien.	40	3 years.	.....	Regular.	All the cervical, 7th & 8th dorsal.	Extreme pain in the head and temples, pain of stomach, loss of appetite, &c.
18	Bridget Collins.	18	1 month.	Single.	Never ap <sup>d</sup> .	All the cervical, 6th & 7th dorsal.	Cough and oppression, pain under the right breast and at the stomach, thirst, loss of appetite.
19	Cath. Dealy.	30	10 days.	.....	Regular.	2d cervical, 9th dorsal.	Pain in the forehead and stomach, with nausea after eating.
	John Connors.	4	3 days.	.....	.....	Cervical and lower dorsal.	Pain in the epigastrium on pressing the lower dorsal, cough, oppression.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

B.	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	20	Mrs. Kenny.	40	1 year.	.....	.....	Upper cervical, 7th or 8th dor- sal.	Pain in the forehead, shoulder, arm, and pit of stomach, some- times in the left hip-joint, groin, and knee; fits of trem- bling, as if ice was thrown on her, throbbing at the tem- ples.
	21	Mary Neville.	40	2 weeks.	.....	Regular.	Cervical slightly, but extreme at the 8th or 9th dorsal.	Oppression, palpitation, pain of stomach, flatulence, pain under each breast, loss of appetite, springs on pressure at the eighth or ninth dorsal.
	22	Kate Ryan.	30	1 year.	.....	A nurse.	2d cervical, 8th or 9th dorsal.	Vertigo in the morning with nausea and lassitude, pain at the stomach extending to the umbilicus.
	23	Mary Burgh.	11	3 weeks.	.....	.....	2d cervical, 7th or 8th dorsal.	Instant vomiting of food, sometimes blood, no pain, has lately had inflammation and suppuration in the right ear.
	24	Js. Fitzgibbon.	24	1 week.	.....	.....	Middle cervical and dorsal.	Cough and pain of stomach.
	25	Cath. Walsh.	20	5 weeks.	Single.	.....	Lower cervical, upper dorsal to 6th, afterwards transferred to the lumbar.	Cough and pain of side, eventually succeeded by pain in the small of the back, and dysury.
	26	Anne Kilfoyle.	24	.....	Single.	Never ap- peared freely.	5th and 6th cervi- cal, 6th and 7th dorsal.	Epileptic fits, occasional headach.
	27	Mary Kirby.	23	4½ years.	Single.	Irregular.	Lower and middle cervical, eighth dorsal.	Epileptic fits, pressure on the eighth dorsal occasions pain of stomach.



28	Margt. Pratt.	29	15 years.	Single.	Regular.	3 upper cervical, with slight general tenderness. 8th or 9th dorsal.	Epileptic fits, subject to pains in brow, stomach, abdomen, and groins; these are brought on by pressure on the corresponding vertebra.
29	C. O'Donnel.	22	.....	Single.	.....	Lower cervical, 8th or 9th dorsal.	Pain and great tenderness in the right hypochondrium and stomach, cough, oppression, sudden fits of lowness.
30	Nelly Neville.	22	.....	Single.	Deficient.	Upper cervical, 8th dorsal.	Headach, cough, and debility, pain at the pit of stomach.
	—	33	.....	Married.	A nurse.	Lower cervical, 8th dorsal, pain all down the spine, but no tenderness.	Headach, vertigo, tightness, oppression, pain of stomach and sides, especially on stooping, lifting weights, and turning, weakness of lower limbs.
31	Miss —	56	.....	Single.	Ceased.	Lower cervical, and all the middle and lower dorsal.	Violent pain in the site of the liver and stomach, excessive tenderness, constant vomiting, stiffness of the muscles of the jaws, feverishness, thirst.
32	Anne Fitzgerald	30	.....	Single.	.....	All the cervical, 7th dorsal.	Hard dry cough with oppression, pain in the right eye and brow, soreness of scalp.
33	Cath. Hogan.	19	.....	Single.	Suppressed	3d and 4th cervical, 8th dorsal.	Cough, sudden sense of suffocation, globus hystericus, faintings, pain in the right side and pit of stomach, at the shoulder and down the arms, occasional colic.
34	Bridget Keefe.	17	.....	Single.	.....	Upper cervical, 8th dorsal.	Heaviness of head, giddiness, cough, oppression, lowness, cramp in the neck, sickness, and pain of stomach.
35	Bridget Connel.	45	.....	.....	.....	Lower cervical, 8th dorsal.	Dyspnoea, orthopnoea at night, headach, soreness of scalp, pain and soreness of stomach and right side.
36	M. Shaughnessy	33	.....	.....	.....	2d cervical, 7th upper dorsal.	Headach, cough, oppression, tightness at the lower part of chest, tenderness of stomach, palpitations.
37	Wid. Naughten.	50	3 weeks.	.....	Ceased.	Lowest cervical, 4th or 5th dorsal.	Noise and lightness of head, pain under left scapula, in the left shoulder and arm, stiffness of neck, pain of stomach, trembling, weakness, loss of appetite.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

B.	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	38	James Hanley.	28	6 months.	Laborer.	.....	All the cervical, and the 7th or 8th dorsal.	Pain in the occiput, drowsiness, sometimes insensibility. Cramp in the stomach, palpitations, throbbings of the large arteries, sometimes pain in the cardiac region.
	39	D. G.	18	.....	.....	.....	2d cervical, 7th or 8th dorsal.	Indistinct vision, blindness, headach, sickness of stomach, sometimes lethargy with loss of recollection on waking out of it, and hurry and confusion of ideas for some hours.
	40	Kate Capel	56	3 weeks.	Married.	Ceased.	All the cervical, and 5th or 6th upper dorsal.	Violent asthmatic fits seizing her every night, palpitation, a feeling as if she was about to die, terminating in general perspiration and debility.
	41	Mary Shehan	.....	.....	.....	.....	All the cervical and the dorsal down to the 8th.	Headach and pain of stomach, with the usual train of nervous symptoms.
	42	Kit. Callaghan.	.....	.....	.....	.....	All the cervical and the dorsal to the 6th.	Headach, giddiness, weakness, loss of appetite, &c.
	43	L. A. —	16	3 months.	Single.	Regular at first, but at length appeared every 3 weeks.	2d and lower cer- vical, and all the dorsal.	Pain in the right side, subsequently in the left, headach, sick- ness of stomach, loud, harsh, dry cough, pain of chest with tenderness.
	44	Pat. Kelly.	27	3 weeks.	.....	.....	Lower cervical and dorsal.	Pain at the right side and top of the shoulder, tenderness of chest, cough, oppression, quick small pulse, dyspnœa.

45	Kitty Farrel.	43	.....	A widow.	Occasional menorrhagia.	Middle cervical, and from the 4th upper dor- sal to the 9th.	Tremblings, choking, uncontrollable laughter, oppression, fits of lowness, temporary paralysis of right arm, pain of sto- mach, eructations.
46	Mary —	24	.....	Married.	Within two months of her con- finement.	all the dorsal to the 7th.	Pain in right upper and lower jaws affecting all the teeth, and extending down the neck as far as the clavicle, pain of left side of the neck and shoulder and down the left arm.
1	M. Fitzgerald.	18	2 months.	Single.	.....	8th or 9th dorsal.	Pain at the pit of stomach and right side, brought on by lifting weights or stooping.
2	Kata Hanley.	36	4 years.	.....	Every three weeks, her usual habit.	7th dorsal.	Pain in the left side, sometimes in the occiput, palpitation.
3	E. M'Namarah.	17	1 month.	Single.	Not appear	9th dorsal.	Pain at the pit of stomach, sometimes vomiting, cough, op- pression.
4	David Nealon.	12	6 months.	.....	.....	9th dorsal.	Pain in the site of the spleen and left lobe of the liver.
5	Widow Drew.	40	6 months.	.....	Ceased one year.	9th dorsal.	Pain of stomach and left side, palpitation, tremors, &c.
6	Mary Russel.	35	1 week.	.....	Suppressed 3 months.	10th dorsal.	Headach and pain in the right side.
7	Margt. Evans.	16	.....	.....	.....	12th dorsal.	Pain in the left side over the hip.
8	Bridget Slattery	30	6 months.	.....	Suppressed 4 months.	7th or 8th dorsal.	Pain under left breast, cardialgia, constipation.
9	Mary Kerr.	60	3 months.	.....	Ceased.	7th dorsal.	Pain and burning feel at the stomach, tremblings, &c.
10	Cath. Williams.	25	2 days.	.....	Regular.	8th or 9th dorsal.	Fits of syncope or insensibility, preceded by shiverings, hic- cough, eructations, &c.
11	K. O'Callaghan.	22	2 days.	Married.	Pregnant.	8th or 9th dorsal.	Fits of syncope or insensibility, pain of stomach, shiverings, hiccough, eructations.
12	Miss —	30	.....	.....	Regular.	7th or 8th dorsal.	Pain under left mamma, a feeling as if a hot iron was laid up to it, hysterical symptoms.

C.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

C	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	13	Kitty Joice.	24	.....	..	Irregular & scanty.	2d and 9th dorsal	Pain and tenderness in the hepatic region, sometimes extending down to the hip, pain at the shoulder, the latter brought on by pressing the second dorsal, the former by pressing the ninth.
	14	Mary Halloran.	40	2 years.	.....	.....	8th dorsal.	Pain down both arms to the wrists.
	15	Mrs. —.	35	.....	Married.	.....	Often profuse, subject to miscarriages & floodings.	Pain of stomach with disposition to vomit on taking food, headach, distressing pain of the sides, dragging or burning feel as if fire was applied, at other times affected with dysury, with I suppose a tenderness of the lumbar spine.
	16	Gar. Connors.	40	.....	.....	.....	6th, 7th, and 8th dorsal.	A dull pain at the ensiform cartilage extending across the chest and to the left shoulder
	17	M. Fitzgibbon.	24	.....	.....	.....	7th or 8th dorsal.	Pain under the left mamma, increased by lifting weights or stooping.
	18	James Enright.	40	.....	.....	.....	7th or 8th dorsal.	Pain and soreness at the sternum, and shooting from the back on pressing the 8th dorsal, cough.
	19	Miss —.	35	4 weeks.	.....	Regular.	Lower dorsal.	Pain in the hepatic region with tenderness.
	20	M. O'Donnell.	45	3 years.	.....	.....	9th dorsal.	Pain in right side, confined to a small spot about the situation of the colon, loss of appetite, flatulence; the pain and eructation excited by pressure on the 9th dorsal.
	21	Mary Lee.	20	1 year.	Unmarried.	Irregular.	5th, 6th, 7th, and 8th dorsal.	At first pain in the right side and under the right breast, increased by twisting or stooping, then transferred to the left; latterly pain at the pit of the stomach and over the left ileum, heartburn.
	22	Bridget O'Brien.	16	.....	.....	.....	The dorsal to 7th or 8th.	Cough, oppression, debility, pain of stomach.
	23	Margt. Forward.	25	.....	Unmarried.	.....	7th or 8th dorsal.	Pain of stomach occurring after a fall.



D	1	Cath. M'Mahon.	50	14 days.	.....	Ceased five months.	7th dorsal, lowest lumbar, and sacrum.	Pain at pit of stomach, dyspnoea, pain at the anus and neck of the bladder.
	2	Margt. Mason.	35	1 year.	.....	Suppressed 2 months.	From 7th to 12th dorsal, lowest lumbar, and top of sacrum.	Pain at the pit of the stomach, at the right side, at the umbilicus, and at the top of the right hip; pressure on the corresponding vertebra increases the pain.
	3	Kate Farrel.	49	1 week.	.....	Appearing every two weeks.	7th dorsal, all the lumbar.	Pain at the pit of the stomach, fluttering at the heart, fits of trembling and yawning, catamenia more frequent than natural.
	4	Anne Hannan.	22	.....	.....	Was suppressed but has returned since her illness.	All the dorsal and lumbar vertebrae.	Pains in all her limbs and joints, at the sternum, sides of the abdomen, round the hips, and in the whole length of the back; fits of insensibility on pressing the 7th dorsal.
	5	Mary Spearin.	22	.....	.....	.....	Last cervical, all the lumbar.	Pain at the sternal end of the clavicle, pains in the loins, hips, behind the trochanter, down the leg, and in the sole of the right foot.
	6	Mrs. Feagh.	40	6 months.	Married.	.....	Dorsal, lumbar, and sacrum.	Palpitation, distressing feel of fright and hurry, symptoms of gravel or pain and difficulty of passing water.
	7	Mrs. —.	50	.....	Married.	Ceased.	Lumbar vertebrae, and sacrum.	Pains in the sacrum and lower limbs, general cedema with little secretion of urine.
	8	Miss —.	28	6 months.	.....	Regular but considerable.	At first the 7th or 8th dorsal, afterwards the lower dorsal or upper lumbar.	Palpitation and oppression, alternating with pain of stomach and nausea; afterwards, when the upper lumbar vertebrae became affected, pain in the bowels, diarrhoea, tenesmus, which again occasionally gave way and was succeeded by the pain of stomach.
	9	Bridg. Frawley.	40	1 year.	Married.	Regular.	From 9th dorsal to sacrum.	Pain in the back, hips, and legs, pressure behind the trochanter excited pain at the pit of the stomach.
	10	Bridget Walsh.	30	.....	.....	.....	From middle dorsal to sacrum.	Pain in the back from the middle down to the sacrum, pain in the course of the sciatic and lameness of left leg, no symptomatic pains.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

D	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	11	Mrs. Switzer.	30	1 day.	Married.	After delivery.	Lower part of spine and sacrum.	High fever with violent pain in the tender part of the spine occurring in paroxysms, on the slightest motion of the trunk or limbs, ischuria and subsequently partial paralysis of lower extremities.
	12	Miss —.	30	2 days.	.....	Regular.	Lower dorsal and lumbar.	Feverishness with excruciating pain, at the lower dorsal and upper lumbar vertebrae, increased at intervals, dysuria, with paralysis of the lower limbs.
	13	S. McNamarah.	13	10 days.	.....	Not app <sup>d</sup> .	Lower dorsal and lumbar.	Feverishness, small, hard, rapid pulse with little heat of skin, violent pain in the back occurring in paroxysms with general pains resembling rheumatism, general pain and tenderness of abdomen, difficulty and pain in passing water, excruciating pain on the slightest motion of the trunk or limbs, eventually incontinence of urine and paralysis of lower extremities.
	14	Mary —.	24	3 months.	Unmarried.	Suppressed	Lower dorsal and lumbar.	Feverishness with excessive pain in the tender portion of the spine, screams if it is touched, or at any attempt at moving or turning in the bed; pain in the sides, abdomen, hips and knees, the abdominal pains occurring in paroxysms like colic, dysuria.
	15	John Kelly.	36	6 weeks.	A labourer.	.....	All the cervical and lumbar.	Violent pain in the back, increased by the slightest motion, torturing pains of the limbs and joints, knees and ankles swelled and tender, screams when they are touched, headache, thirst, feverishness, delirium, perfectly sensible when spoken to, pain of chest, cough, bloody expectoration; complaint originated in a sprain of the back about the upper lumbar vertebrae. Died in three weeks.

1	John Kain.	50	2 days.	.....	.....	.....	Superior lumbar.	Violent colic with dysury.
2	E. Hammond.	56	4 weeks.	Married.	.....	Ceased.	Superior lumbar.	Pain in the affected part of the spine.
3	Mary Hurst.	28	1 year.	Unmarried.	.....	Suppressed 1 year.	Middle lumbar.	Pain over the left ileum extending to the umbilicus.
4	Mrs. —.	60	2 weeks.	Married.	.....	Ceased.	Superior lumbar.	Spasms of stomach, sometimes with violent retching.
5	Miss —.	35	1 week.	.....	.....	Regular.	Superior lumbar.	Pain of stomach and right side in hypochondriac region, with excessive tenderness and occurring in paroxysms.
6	Ellen Goggin.	20	6 months.	Unmarried.	.....	.....	Lumbar vertebrae.	Pain in the back and in both sides.
7	Bridget Nash.	27	3 weeks.	Unmarried.	.....	.....	All the lumbar.	Pain in the muscles of the right side, debility, and sleepy sensation in the lower extremities.
8	Bridget Neale.	19	.....	.....	.....	Suppressed	Lower lumbar and sacrum.	Debility and numbness of lower extremities.
9	Mrs. Listen.	50	2 days.	.....	.....	Ceased.	All the lumbar.	Violent paroxysms of pain in the lower part of the abdomen, with excessive tenderness over the whole of it, pulse 80, no fever.
10	Mrs. O'Brien.	30	1 day.	.....	.....	After delirium very.	All the lumbar and sacrum.	Acute pain and tenderness of the uterine region, with partial suppression of the lochia and fever, pain of back; bearing down pains without expulsion of coagula.
11	Mrs. —.	24	1 day.	.....	.....	After delirium very.	All the lumbar and sacrum.	Acute pain with tenderness of the uterine region, hard pulse, high fever, bearing down pains without expulsion of coagula, lochia suppressed.
12	Mrs. McGrath.	40	3 days.	Lately a nurse.	.....	.....	All the lumbar vertebrae and the sacrum.	Screaming with pain in the uterine region and back, which increased violently by fits, forcing down, difficulty and pain in passing water; was affected some weeks since with gastro-enteritis, attended with constant vomiting on taking food, there was then tenderness of the cervical and dorsal portion of the cord.
13	Thomas Carty.	45	.....	.....	.....	.....	Lower lumbar and sacrum.	Pain and tenderness of spermatic cord and left testicle.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

F No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
1	Kitty M'Donnel	19	.....	Unmarried.	Regular.	All the spine.	Pain in the brow and eyes, pain in the chest, shoulders, and arms, pain in the hepatic region and stomach, and on the outside of the right thigh following the course of the cutaneous nerves.
2	Thos. Looney.	12	.....	.....	.....	All the spine.	Pain in the head and brow, pain at the pit of the stomach, at the umbilicus, and about the sigmoid flexure of the colon, sometimes so violent as to make him scream and bring on a fit of insensibility, the fit immediately brought on by pressure at the 2d lumbar vertebra.
3	Mrs. —.	48	1 week.	Married.	Regular.	All the spine.	High fever with headach, intolerance of light and constant nausea, pain in the chest, hard dry cough, oppression, severe pain in different parts of the abdomen.
4	Mary Faunen.	25	.....	.....	Regular.	All the spine.	Pain in the brow, in the hepatic region, and at the stomach, pressure on the 8th dorsal brings on the pain of liver and stomach, pressure on the last lumbar also brings it on at the stomach.
5	Mrs. —.	.....	2 years.	Married.	Regular.	All the spine.	Fits of insensibility and loss of speech which lasts some hours, tendency to paralysis in the right side, &c.
6	Nelly Sheely.	35	.....	.....	Regular.	All the spine.	Frequent headach, vertigo, swimming, palpitation, debility, numbness, and disposition to paralysis of the legs and arms.
7	B. Madigan.	45	2 weeks.	.....	.....	All the cervical and from the 7th dorsal downwards.	Pains of half the face, left side of the forehead and temple, radiating from the ear, pain in the loins especially at night, screams on turning in the bed.



8	Mary O'Conner.	37	4 months.	Unmar- ried.	Suppressed	2d and 3d cervical, 6th, 7th, 8th, 9th dorsal, low- est lumbar.	Hard cough, oppression, pain under the left breast, pain in the small of the back and left side, colic.
9	Bridget Clarey.	40	1 week.	.....	Regular.	1st and 2d cervical, upper lumbar.	Pain of left side of the forehead, face, and neck, slight pain of stomach and sense of oppression, pain in the lower part of the abdomen.
10	Cath. Dillon.	18	.....	Unmar- ried.	Suppressed 1 year.	All the cervical & from the 5th dorsal to the lowest lumbar.	Globus hystericus, cough, oppression, pain under the left breast, a weary tired feeling all over.
11	A. Shaughnessy.	28	.....	.....	Suppressed	Middle cerv., 8th or 9th dorsal, & 1st or 2d lumbar.	Pain at the pit of the stomach, tenderness there and all over the abdomen, occasional dysury, great thirst, debility.
12	Mary M'Coy.	18	2 years.	Unmar- ried.	Not app <sup>d</sup> .	3d cervical, 7th dorsal, & upper lumbar.	Pain at the crown of the head at intervals; pain at the ster- num and under left breast of two years standing.
13	M. Shaughnessy.	25	4 months.	.....	Suppressed	Lower cerv., 9th dorsal, upper lumbar.	Pain at the pit of the stomach and over the right hip, increased by exercise, &c.
14	Johanna Ferris.	20	1 year.	.....	Regular.	Upper cerv., 8th dorsal, all the lumbar.	Pain in the head, pain in the hepatic region, feeling of fatigue and debility.
15	Hannah Mann.	35	.....	.....	A nurse.	Upper cerv., 9th dorsal, & upper lumbar.	Cough, oppression, pain at the sides extending to the back, weakness of lower limbs.
16	Bridget Leahy.	22	.....	.....	.....	The cervical, 7th or 8th dorsal, and lumbar.	Great headache, oppression, shrill piping noise in breathing, burning pain at the epigastrium, pains in the limbs, joints, feet, &c.
17	Mr. —	24	1 year.	.....	.....	All the spine.	Tendency to syncope on pressing or examining the spine.

A TABULAR VIEW OF 148 CASES OF SPINAL IRRITATION, INCLUDING ALL ITS FORMS.

F	No.	Name.	Age.	Time ill.	Married or Single.	Catamenia.	Tenderness of vertebra.	Symptoms, &c.
	18	Miss —.	35	.....	.....	Dysmenorrhœa and leucorrhœa.	All the spine.	Tendency to syncope on pressing the cervical vertebrae, pain of side, pain in the uterine region, bearing down pains, dysury, leucorrhœa.
	19	Mrs. Connel.	24	3 months.	.....	Regular.	All the spine.	Pains in the arms, shoulders, and anterior part of the chest, pain of stomach, pains in lower limbs, proclivencia uteri, her complaints increased by lifting weights.
	20	D. Hastings.	28	.....	.....	.....	All the spine.	Headach, pyrosis, gastrodynia, fits of sinking, a feeling of weight on the back, and as if there was a cover over the whole of his person, but particularly the head.
	21	Mrs. —.	35	1 day.	Married.	Regular.	All the spine.	Violent throbbing headach with soreness of scalp, tenderness of the whole person, but especially of the abdomen and lower limbs, sickness of stomach and retching, pain in the back and hips, high fever, full pulse and burning skin, abatement of all the symptoms on the appearance of erysipelas of left leg on the third day.
	22	John Williams.	60	2 weeks.	.....	.....	At first extreme tenderness in all the cerv. & dorsal, afterwards in the lumbar.	After slow nervous fever, with cough, dyspnœa, headach, and fits of syncope; rigors, pains in his limbs, especially in the shoulders, arms, and fingers, subsequently attacked with violent neuralgia of two of his toes, which kept him screaming night and day.
	23	Margt. Doherty.	24	1 week.	Married.	Suppressed	All the spine.	Intermittent headach with ophthalmia, pains in the head, neck, chest, and sometimes in all the limbs, sudden numbness and weakness of the upper or lower extremities, coldness of the thighs and legs, faintings.

G	1	Nelly —.	18	.....	Unmarried.	.....	No spinal tenderness.	Distressing headache, uneasiness of stomach, difficult deglutition, fits of insensibility with throbbing temples and cold extremities, distressed respiration in the intervals of the fits.
	2	Margaret —.	24	2 years.	Unmarried.	Scanty.	No spinal tenderness.	General debility, palpitations, internal shiverings or tremblings, oppression, pains shooting through all her limbs to the extremities of her fingers, and loss of appetite.
	3	Miss —.	.....	.....	.....	.....	No spinal tenderness.	Headach for two weeks, then partial blindness of left eye, subject for some months to pain of stomach, extending to the back and not relieved by any treatment, afterwards sickness and acidity of stomach, pains in the shoulders, sides, and upper and lower extremities, pain on bending or twisting the spine, reeling, sense of weight, and noises in the head, numbness of right leg, pain in the right hip and knee, eventually quick pulse with hysteric symptoms.
	4	Mrs. —.	45	2 years.	A widow.	.....	No spinal tenderness.	Chronic abscesses in the neck, numbness and weakness of left side, pains in the hips, thighs, and knees, pain all down the spine but no tenderness, has a tumour at the right side resembling a lumbar abscess which has been coming on for ten years.
	5	O'Donnel.	30	.....	A nurse.	.....	No spinal tenderness.	After cough, sore throat, and feverishness, general oedema of the body, loss of appetite, thirst, nausea, a burning pain within her, in the stomach and abdomen, no tenderness, afterwards retention of urine with ischury, difficulty of swallowing, and globus hystericus.

# SUMMARY OF THE PRECEDING TABLES.

	CASES.	PROMINENT SYMPTOMS.
A	28 Cases of cervical tenderness. 8 Men. 8 Married women. 12 Unmarried.	Headach, nausea or vomiting, face- ach, fits of insensibility, cough, affections of the upper extremi- ties. In 2 cases only, pain of stomach. In 5, nausea or vomiting.
B	46 Cases of cervical and dorsal tenderness. 7 Men. 15 Married women. 24 Unmarried.	In addition to the foregoing symp- toms, pain of stomach and sides, pyrosis, palpitation, oppression. In 34 cases, pain of stomach. In 10, nausea or vomiting.
C	23 Cases of dorsal tenderness. 4 Men. 6 Married women. 13 Unmarried.	Pain in the stomach and side, Cough, oppression, fits of syn- cope, hiccup, eructations. In 1 case only, nausea or vomiting. In almost all, pain of stomach.
D	15 Cases of dorsal and lumbar. 1 Man. 11 Married Women. 3 Unmarried.	Pains in the abdomen, loins, hips, lower extremities, dysury, is- chury, in addition to the symp- toms attendant on tenderness of the dorsal. In one case only, nausea.
E	13 Cases of lumbar tenderness.	Pains in the lower part of the ab- domen, dysury, ischury, pains in the testes or lower extremi- ties, or disposition to para- lysis. In one case only, spasms of sto- mach and retching.
F	23 Cases, all the spine. 4 Men. 4 Married women. 15 Unmarried.	Combines the symptoms of all the foregoing cases.
G	5 Cases, no tenderness of spine.	Cases resembling the foregoing.

In all, making 148 cases; 26 of which were males, 49 married women, and 73 girls.



## FACTS AND INFERENCES.

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It appears from this summary, and from various cases related in the preceding observations,—

1st, That tenderness at one or more points of the spine is an attendant on almost all hysterical complaints; on numerous cases of functional disorder, where the hysteric disposition is not so obvious; and in many nervous or neuralgic affections.

2d. That many of the symptoms of these affections evidently depend on a peculiar state of certain nerves, probably at their origin, may be reproduced at any moment by pressure, and are often relieved by remedies applied there.

3d. That in all the cases of tenderness of the cervical and upper dorsal spine, there was nausea, or vomiting, or pain of stomach, or affections of the upper extremities; but no pain of the abdomen, dysury, ischury, hysteralgia, or affections of the lower extremities.

4th. That in all cases of dorsal tenderness, pains affecting the abdomen, bladder, uterus, testes, or lower extremities, were usual symptoms: while nausea, vomiting, or affections of the upper extremities, were never complained of.

5th. That nausea and vomiting appeared to bear more relation to tenderness of the cervical spine, pain of stomach to tenderness of the dorsal; but that where there was soreness of both, nausea or vomiting was still more frequent, and pain of stomach scarcely ever absent.

6th. That where several points, or a great extent of the spinal column, is painful or tender on pressure, local remedies are generally less effectual, and there is a strong disposition to transference of the disordered action from one organ to another; the pain or tenderness, in all such cases

of transference, shifting its place to a corresponding part of the spinal column, leaving the original point free, or with a very diminished degree of tenderness.

7th. That spinal tenderness is seldom or never met with in cases of pure inflammation, except when these accidentally occur in persons previously suffering with irritation of the cord; and that when appearances of inflammation present themselves in any organ, accompanied by a corresponding spinal tenderness, they cannot commonly be removed by the remedies applicable to inflammatory cases, and are often rendered worse by them.

8th. That there does not appear to be a complaint to which the human frame is liable, whether inflammatory or otherwise, which may not be occasionally imitated in disturbed states of the cord; and hence that this disturbed state is one vast source of those complaints called hysterical or nervous.

9th. That those functional disorders connected with spinal tenderness are very often attended by some disturbance of the functions of the uterus; but that they are by no means always so, since they occur in those who are regular in this respect, in girls long before the menstrual period of life, in women after it has passed, and lastly in men of nervous susceptible habits, and in boys.

10th. That, in fact, they are not necessarily dependent upon the disorder of any one organ; since they are found indifferently co-existing with disturbance of the digestive organs solely, or the uterus solely, or of the circulating or respiratory system.

11th. That, from the cases detailed, we have reason to suppose spinal tenderness may arise from uterine disorder, from dyspepsia, from worms in the alimentary passages, from affections of liver, from mental emotions, from the poison of typhus, from marsh miasmata, from erysipelatous, rheumatic, and eruptive fevers, and from the irritation arising from local injury.

12th. That it is almost invariably found in connection with gastric or abdominal tenderness in fever; and this ten-

derness is probably like the soreness of scalp, pains in the limbs, &c. dependent on the morbid state of the cord,

13th. That whether in fevers or in other complaints, it is met with in the situation of the eighth or ninth dorsal vertebra much more frequently than at any other part of the spine.

14th. That affections attended by spinal tenderness are seldom fatal: that even in those instances of intense irritation of the cord, under which patients suffer extremity of pain for years, the event is generally favourable.

15th. That they frequently, as well as hysteria, occur with all the appearances of a primary affection of the nervous system.

16th. That affections are occasionally met with, presenting all the marks of the hysteric character, and perfectly resembling cases described as those of spinal irritation, but unattended by spinal tenderness, or any other direct indication of a morbid state of the cord.

## CHAPTER IX.

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### CONCLUDING OBSERVATIONS.

IT is not to be inferred from the preceding essays, that all, or even the greater portion of spasmodic or nervous disorders are referrible to irritation of the spinal cord. Nervous irritation is in men a rare disease; and in women and children, who from their susceptible habits are strongly pre-disposed to it, we can yet only consider it as one of the many morbid affections to which their nervous systems are liable. There seem to be differences as specific between disorders or pains affecting portions of the nervous system, as there are between gout and rheumatism, or between inflammatory and typhus fever; and our inquiries have been chiefly directed to that particular one, which is marked by tenderness of the spinal column. We have endeavoured to illustrate its various forms in every part of the frame, so that in whatever character or organ it appears, it may be known and combated by a common treatment.

That we have not assumed too much, in referring functional diseases of such different complexion to the spinal cord, must be obvious, on comparing them with those which we know to be produced when the cord is absolutely the seat of deep structural disease.

“When we review,” says Dr. Abercrombie, “the phenomena which have been observed to attend the diseases of the spinal cord, we find affections of all the principal organs of the body. In the parts connected with the head and neck, we find distortions of the eyes, convulsive affections of the face, difficulty and loss of speech, loss of voice, contraction of the jaw resembling trismus, and difficulty of



swallowing, which is said in some cases to have nearly resembled hydrophobia. In the viscera of the thorax, there have been observed oppression, palpitation, and strong and irregular action of the heart; painful sense of stricture in the region of the diaphragm, and difficulty of breathing; which in some cases has been permanent, and in others has occurred in paroxysms resembling asthma. In the organs of the abdomen and pelvis we find vomiting, pain of bowels resembling colic, tenesmus, involuntary discharge of fæces, and retention or incontinence of urine. In the muscular parts we observe convulsions and paralysis; the convulsions in some cases resembling chorea, in others tetanus."

It was the discovery of such remarkable imitations of the many complaints of the human frame, that led writers of high reputation to suspect almost all spasmodic and nervous disorders were in reality only symptomatic of some peculiar disordered state of that portion of the cord with which the organs affected were related. These conjectures still wanted the confirmation of less equivocal symptoms of disease in the part supposed to be its immediate seat; but can it be said these are any longer wanted in the class of nervous disorders attended by spinal tenderness, when we find that such tenderness exists chiefly in the portion of the cord by which the functions of the disordered organs are influenced, when we ascertain that by pressure on certain vertebræ many of the complaints may be produced at will,—as fits of insensibility, nausea or vomiting by pressure on the upper cervical,—cough, oppression, pain of chest or side or stomach, or palpitation on pressing the middle or lower cervical,—or colic, or affections of the urinary organs or lower extremities by pressure at the lower dorsal or lumbar; and, finally, when we perceive that a metastasis of the affection from one organ to another, takes place precisely as the tenderness in the spinal cord shifts from one point to another?

But what shall we conclude the nature of this diseased state, this irritation of the cord, to be? The inquiry, we apprehend, can be interesting to us only so far as it may be possible to ascertain whether it be or be not allied to any diseased state, the nature of which we already certainly

know. Beyond this, our investigations can end in little better than vague conjecture, until medical science, and especially the department of physiology, has made far greater advances. We cannot hope to know the manner in which stimuli—whether mental and transmitted from the brain,—or physical and conveyed from the viscera or extremities, affect the centre of nervous influence, until the nature of the nervous influence itself is discovered. We cannot hope to learn by analogical inference while living, or by examination after death, the subtle changes that take place in the spinal cord, when at alarming news, tenderness suddenly takes place at the seventh or eighth dorsal vertebra, with violent pain of stomach; or at one of the lumbar vertebra with flooding\*; or when these effects are equally the consequence of disturbance of the digestive organs; any more than we should expect to trace marks of the powerful sensations or motions which are daily the result of ordinary excitement. We may perhaps infer, that changes sometimes occur in the centre of the nervous system analogous to those which take place in profound emotions, giving rise to the same symptoms, often disappearing as suddenly, and leaving as little trace behind them; but which, depending on causes more permanent, and different from those which occasion them in health, are necessarily considered states of disorder. Were it possible to examine that portion of the nervous system on which the action of muscles engaged in laughter depends immediately after a fit, we do not imagine any one would expect to detect the changes which the sensation had produced. As little perhaps should we look for altered appearances in the more permanent and wearying fits of laughter in hysteria, which we may suppose arise from similar invisible changes induced in the nervous system, but dependent upon some continuing irritation instead of an evanescent emotion.

\* We have seen several instances of this in patients, whose constitutions were disposed to spinal irritation. One lady, we recollect, was apt to be attacked suddenly with spasm of the stomach, on hearing disagreeable news; another, with menorrhagia; a third, with ischuria, &c.

We shall readily admit this obscure notion of the disordered state called irritation is extremely unsatisfactory; and hence probably we are to attribute the dispositions among late writers, to consider it as a form of chronic or subacute inflammation. But if it sometimes excites, or is attended by either of these, and is relieved by antiphlogistic treatment, we know that in general it has little relation with them, either in its progress, result, or the mode of management necessary for its cure. The instances seem frequent, in which no benefit is obtained by local measures, by leeching, blistering, or counter-irritation; and cases are not rare that are beyond the influence of any remedial means with which we are acquainted.

It has been supposed, that low strumous inflammation, affecting the cord or its membranes, would be productive of symptoms very analogous to those of irritation; and certainly, in many instances, it might account for the usual phenomena of that morbid condition: but in by far the greater number it will be found, that there are great and inexplicable differences between them. Spinal irritation sometimes occurs or disappears in a sudden and singular manner, seldom observable in cases of strumous inflammation\*. It seldom affects children or men, but is continually met with in women; while strumous inflammation very generally attacks children, and among either them or grown persons seems to make little distinction of sex. Finally, spinal irritation continues in a most intense degree for years without leading to serious structural disease, which can hardly be said of struma. The latter, it is true, when of a low and indolent character, may also exist for a long time without occasioning organic changes; but when attended by such torturing pain, feverishness, and violent disturbance of the functions of parts, as frequently characterize prolonged cases of spinal irritation, we know that it produces structural alterations rapidly enough.

\* Irritation may eventually excite inflammation of a low character, when long subsisting, or very considerable in degree; just as delirium dependent on inflammation follows that arising from irritation in the last stage of death by famine:

That this morbid condition of the cord is often attended by an inflammatory or febrile state, we are fully aware; and perhaps it may hereafter in itself appear to be some peculiar species of low inflammation, to which persons of the hysteric temperament are especially liable. At present however, we see no advantage in considering any state of obscure disease as purely inflammatory, to which the usual remedies for inflammation do not even commonly apply; nor can we assent to that spirit of generalizing, which offers no other benefit than the introduction of a hypothetical simplicity into medical doctrines. A name cannot extend our information, or render our ideas of a complaint clearer, the real nature of which we can at best only conjecture; nor can we by any arbitrary association with a class of diseases whose treatment is already established, assure ourselves of more effectual remedial measures, when our experience has proved them to be so often unavailing.

It seems a singular fact, that whatever the morbid condition of the cord may be in these disorders, it is much more readily induced by distant local irritation, than by local inflammation. Thus it may be excited to an exquisite degree by the irritation of a worm, or a strong acid in the stomach, when inflammation of that organ will not produce it, or by the irritation from the points of new teeth pushing up through the gum, when ulceration of the same parts will not occasion it. Local inflammation very seldom excites spinal tenderness, although we have given one or two instances of it, and to this fact we may look with some confidence in forming our diagnosis in perplexing cases. Whenever, as we have before observed, there exists great spinal tenderness, we have strong reason to conclude, that no acute inflammation is present.

The connection of spinal tenderness with many diseases which we cannot in the present state of our knowledge look upon as mere symptoms of peculiar affections of the cord, is extremely curious and worthy of investigation. It is met with in severe inflammatory, typhoid, intermittent, and perhaps we may say eruptive fevers. The pain in the back and limbs, the tremors and the oppressions, however, which



Ballonius referred to affection of the cord, precede the tenderness of spine for some days. It is seldom very perceptible in cases unattended by severe headach, or gastric tenderness, and in light fevers in which these symptoms do not appear, cannot be met with at all.

We believe it may generally be detected some hours before the soreness in the epigastrium, and so far perhaps they may be said to stand in the relation of cause and effect to one another; but however this is, we are convinced the apparently inflammatory state which comes in conjunction with tenderness of the dorsal spine is by no means of that importance which many physicians, especially those of the school of Broussais would lead us to suppose. This conclusion we had arrived at, as a mere practical inference, long before we could offer the slightest explanation of it, or were aware of its connection with a tender state of the upper cervical and lower dorsal spine. The apprehensions conjured up when a patient shrinks or screams on pressing the epigastrium, are very often out of proportion to the evil, and would have much less influence, if it were at all common for medical men, as it was with us during the plague of typhus in this country some years since, to witness a great number of severe cases pass through their whole course without any assistance from medicine. We would by no means be supposed to undervalue inferences drawn from external examination of the stomach and bowels. There may be true inflammation, either acute or subacute, of these in fever, as there may be of the lungs or brain, and we will readily admit that we should look upon the existence of gastric tenderness in any fever, even when attended by the corresponding soreness of the spine, as a symptom demanding some watchfulness, chiefly from the belief that it indicates considerable disturbance of the larger nervous masses, the brain or spinal cord, and consequently of the functions and secretions of one or more organs. These deranged functions and diseased secretions must more or less injuriously react on the portions of the nervous system in whose disorder they originated; and so far we should say, a fever in which gastric tenderness occurred was not so safe, as one in which

it did not occur. It is in short in this respect like delirium, one of the most common accidents of fever; and (though neither necessary to it, nor usually dangerous, nor constituting the disease) of sufficient consequence as regards the treatment to claim some consideration. That we are not here mischievously underrating a very serious symptom will, we believe, be generally admitted by practitioners of experience, when we remind them of the frequent instances in which fever occurs without any tenderness of the epigastrium from its commencement to its termination; the many in which, when wholly unattended to, it is productive of no harm whatsoever; its never appearing in the progress of fever until long after the disturbance of the nervous system (which has been supposed to depend on it) has manifested itself; its being very usually attended by tenderness at the corresponding portion of the spine, and above all, its existing to as great a degree in symptomatic fevers\*, those of a typhoid character from bad compound fracture of a leg or arm, attended with headach, thirst, delirium, and vomiting, where it can be regarded only as secondary and almost unimportant.

The disorder of the stomach in fevers, like that of the brain when delirium attends, is in truth dependent on disturbance of the great central nervous masses, produced we know not how, by the infectious poison which has generated the disease. "Whenever," says Mr. Abernethy, "*the nervous energy* and general powers of the constitution have been weakened and disordered by any violent disease, as fever, small pox, measles, hooping cough, &c., the digestive organs are frequently affected in consequence, and such affection becomes the cause of many secondary complaints †."

The existence of spinal tenderness in cases of ague may be perhaps attributed to the same cause on which it depends in continued fever, but it is usually of a more acute character in the former; it has been so at least in the few cases

\* The gastric tenderness certainly does, and we have every reason to believe it is, as in other fevers, attended by the spinal tenderness.

† On the Origin and Treatment of Local Diseases, vol. i, p. 18.

which we have met with. This circumstance, together with the periodical nature of the complaint, and the description of remedies by which it is relieved, would bring it near to the class of neuralgic affections. It would indeed seem not improbable, that all complaints which observe regular periods in their attack and decline, belong essentially to the nervous system, and many of them perhaps solely to the spinal cord. Ague has been supposed to differ from continued fever, merely in the circumstance of its intermissions; but there is also a very extraordinary and inexplicable difference between them, with regard to the influence of remedies over them. The paroxysm of ague may be interrupted in any of its stages, or prevented from recurring when once over, by well-known means; but we believe no known medicine can cut short contagious fever once fairly formed, nor prevent its accession when the constitution has shown manifest symptoms of its approach\*. The same holds true

\* When typhus fever was very prevalent in this country some years ago, we had opportunities of trying all the popular remedies for cutting it short in its earliest as well as its confirmed stage—emetics, diaphoretics, purgatives, cold bathing, &c., but we could never convince ourselves that any particular plan of treatment was capable of arresting the complaint. Under all of these remedies, patients occasionally got immediately well; but a vast majority of cases wholly resisted their influence. As we could attribute this failure to no observable difference, either in the treatment or the period of time at which it was employed, and as it seemed somewhat unsatisfactory to assume that remedies, which were inefficacious in ninety-seven cases out of a hundred, were yet successful in the remaining three, we necessarily concluded those three were not instances of contagious fever at all.

The only circumstance which would, notwithstanding these facts, induce us to believe fever might be interrupted or arrested in its course like ague, by the influence of medicine, is our having witnessed the actual accomplishment of such a cure by a fit of terror.

A girl of the name of Dalton, was visited in the neighbourhood of Pallas-Kenry, as a Dispensary patient, and being found in bad typhus fever, was transmitted to the Limerick Fever Hospital. In a week afterwards her brother took ill in the same house, and after some days' illness was visited from the Dispensary. He was found confined to his bed with all the symptoms of confirmed typhus, and was also sent to Limerick. On getting out of the car at the gate of the Hospital, he was assisted up stairs by the nurses, but in his way was met by some



of all the eruptive fevers, which having once seized on the system, cannot be prevented from passing through their usual stages.

Rheumatism, whether in its acute or chronic form, is another of the complaints, which, as we have seen, is attended by soreness of the vertebral column. It is exceedingly difficult to distinguish it from pure acute inflammation of the cord or its membranes, when it has itself seized upon these structures. If it be only in a subacute shape, however, it more nearly imitates an advanced case of spinal irritation, from which it may be discriminated by the patient referring to the back as the chief or sole seat of his sufferings, disregarding the symptomatic pains, by his having other rheumatic affections, or being subject to them, and by the attack having originated in wet or cold. In cases of spinal irritation, the pain of back, though much complained of, never occupies the patient's sole attention for any length of time. She complains more occasionally of her joints or limbs, or of some hysterical or spasmodic affection, and she is not benefited by the remedies usually of use in rheumatic cases, if they have been employed.

The causes of tenderness of spine in almost all febrile diseases, rheumatic, intermittent, continued, or eruptive, and its absence in all inflammatory, are problems for future investigation, to which we can here merely advert. Our endeavours have been chiefly directed to trace the connection of this symptom with the functional disorders of the system, which are usually unaccompanied by fever. The summary of facts which we have given at the close of the cases, suggest such obvious and necessary inferences in proof of our views with respect to these, that little remains

persons who were descending with a coffin on their shoulders. The sick man inquired whose body they were removing, when one of the bearers inadvertently answered—"A girl of the Daltons." The brother, horror struck, sprung from between his conductors, dashed down the stairs, passed the gate of the Hospital, and never ceased running until he reached his cabin in Pallas-Kenry—a distance of about 12 miles. He flung himself on the bed immediately, fell into a sound sleep, and awoke in the morning free from illness.



of our task but to enter somewhat more particularly into their character, and offer some observations on their treatment.

Irritation of the spinal cord attacks persons of either sex and of all ages, but especially females at or after the age of puberty. Those of the hysteric temperament are by far more disposed to it than others. It occurs or commences in a variety of ways, and in whatever shape or degree it affects a person, may exist for a considerable time without any remarkable change. It sometimes declares itself by simple pain affecting the branches of a single pair of nerves, generally in the right or left side beneath the mamma. In such cases it seems very analogous to nervous tooth-ache, or chronic rheumatism; occasions little disturbance of the general health, and abates or recurs like these with the changes of the weather. It is very often, as Dr. Brown of Glasgow has described it, a wearying numbness rather than pain, or a sensation as if a walnut or other hard substance was pressed within a tight belt. Sometimes it begins in the right hypochondrium, extending usually to the shoulder and arm, as in complaints of the liver. At other times it supervenes on a slight inflammatory or bilious attack, and is ushered in by cough and oppression, or pain, or fever and vomiting, or by paroxysms of hysteria, faintings or palpitations. Nervous symptoms very soon appear in the greater number of these cases, however they commence, or whatever complaint they simulate. The heart, the vascular or respiratory system, become affected. We have lownesses, fits of crying, or a disposition to it from very trifling causes, with languor and debility. There is occasionally a coldness of the extremities, or of the whole person, a chilliness sometimes amounting to actual rigor, or perhaps the patient complains of odd or anomalous affections, which may not appear to have the remotest connection with the original complaint. The pulse becomes quick and irritable, or may have been so from the commencement, and the tongue furred; two symptoms very indicative of an obstinate and troublesome attack. The stomach, the bowels, or the uterus, are occasionally affected in various ways; there is

pain or pyrosis, constipation or diarrhœa, obstruction of the menses or menorrhagia, or there may be disturbance of the bladder; and these complaints frequently in the same person alternate with each other, or with disorder of the lungs or heart; but whatever the nature of the complaint may be, it is usually worse at the catamenial periods. In the severe cases epileptic fits sometimes take place, but more commonly the patient is seized with a degree of insensibility, a kind of cataleptic trance, in which all external objects are lost to her, and she is only conscious of intense pain, with throbbing or rushing of blood to the head, and perhaps sickness of stomach. When recovered from this, the state of nervous irritation is at times quite indescribable. We have heard patients complain that the slightest touch thrilled through the whole frame, or that every half inch of the surface of the body felt as if pinched or twisted, or as if screws were turning in it. Pains in the extremities, and especially in the joints, are very usual. When severe they are often supposed to arise from rheumatism; and there is generally some loss of muscular power in the upper or lower limbs, as the upper or lower portion of the cord may chance to be affected.

This is a general description of the complaint, but it will not always enable us to distinguish cases of spinal irritation from those of organic disease, which are often attended in delicate or nervous habits by many of the symptoms enumerated. Those more particularly diagnostic of irritation of the cord are,

1st. The pain or disorder of any particular organ being altogether out of proportion to the constitutional disturbance.

2dly. The complaints, whatever they may be, usually relieved by the recumbent position, always increased by lifting weights, bending, stooping, or twisting the spine; and among the poorer classes, often consequent to the labour of carrying heavy loads, as in drawing water, manure, &c.

3dly. The existence of tenderness at that part of the spine which corresponds with the disordered organ.

4thly. The disposition to a sudden transference of the

diseased action from one organ or part to another, or the occurrence of hysterical symptoms in affections apparently acute.

5thly. Perhaps we may mention the occurrence of continued fits of yawning, or sneezing. They are not very common symptoms; but as scarcely ever occurring in acute or organic diseases, they may generally be considered as characteristic of nervous irritation.

Of all these symptoms, the increase of pain on lifting weights, and the spinal tenderness, are the least equivocal. Pain of stomach, when dependent on, or connected with tenderness of spine, may always be increased by placing a weight on the head, or lifting one. The female peasantry in this country, usually complain of a great aggravation of their sufferings from carrying cans of water; and sometimes the morbid sensibility of the nerves is so extreme, that we are told, when they step inadvertently on a pebble, such sudden pain of stomach seizes them, that they feel as if life would leave them.

With regard to the spinal tenderness, we shall find on examination, there is something peculiar about it. The symptom is of course common to irritation and to a much more serious disease of the cord, but in the former it is more acute, especially in its early stage, than it is in the latter; and we sometimes find, as soon as the finger reaches the affected vertebræ, that the patient springs as if an electric spark had passed through her, or falls into a fit of insensibility, or syncope.

The manner in which patients describe several symptoms is also very characteristic of the complaint. Thus, in speaking of her pains, it is common for a patient of the poorer class to say, "I feel as if my arms, or legs, or ribs would break," invariably using the word *break*, as descriptive of the sensation. Again, in speaking of pain of stomach they frequently describe it as resembling the sensation produced by a hot iron or a burning coal laid up to the organ, or say, "they feel as if the stomach would light." This sensation of heat or burning, when there is otherwise little fever or constitutional disturbance, seems very indicative of

some affection of the nerves. We recollect a patient once applying to us for relief from an occasional sense of burning about the sacrum. It always attacked him suddenly, and though it passed off in a few minutes, was exceedingly unpleasant while it lasted. The first time it happened to him, he fancied his clothes had caught fire, and was not a little astonished on putting his hand behind, that he could find no possible cause for the sensation. The first symptom a man felt on spraining his back in lifting a heavy bag, was a glow as of fire about the sacrum. We could mention many other instances.

The disease of all others with which a severe case of spinal irritation is most readily confounded, is organic affection of the vertebral bones, although no two complaints can be so dissimilar in their nature, or require a more different treatment for their cure. Disease of the vertebræ is always attended by many of the symptoms of mere irritation; the pain in the side or stomach or bowels, the cough, oppression, and sense of tightness round the waist, and these are partially relieved in both by reclining. One is apt to be still more deceived, on examination of the spine, by discovering an apparent prominence of the tender vertebræ. We would wish particularly to direct the attention of the medical profession to this subject, as we are convinced most dangerous and cruel errors are continually committed by very judicious practitioners from the occasional difficulty of the diagnosis. We believe the two complaints may be always discriminated by considering,—

That strumous disease of the vertebræ attacks the young, and most frequently those under the age of puberty, who are least of all liable to be affected by spinal irritation.

That disease of the vertebræ, when attacking young girls, is seldom accompanied by symptoms of a purely hysterical character, while any serious irritation of the cord can scarcely exist without them.

That the apparent prominence of the tender portion of the spine which sometimes exists in cases of irritation, is never strictly angular. If four or five of the vertebræ seem to project, the prominence is nearly equal in all, whereas in



caries of the bones it would be greatest in the middle; it in fact depends on a slight puffing of the ligaments or investments of the spine, and not on displacement or curvature.

That absolute paralysis of the lower limbs is a rare consequence of irritation, a frequent one of caries of the bones.

That the general health suffers less in the former complaint, and it is not attended by the look of serious organic disease which is indicative of the latter.

The constitution of the parents may also prove a useful guide to us, the disposition to spinal irritation as well as scrofula being hereditary. We have frequently found almost all the members of a family affected by it, and should at once suspect the reality of any supposed organic disease of the vertebral column, on ascertaining that the patient's mother had been a sufferer from irritation of the cord. If it be possible, after all these considerations, that a case could still admit of doubt, we would strongly recommend the employment of mild remedies and moderate rest, before condemning the patient to issues and a mattress. The importance of this recommendation may be estimated by recollecting, that severe treatment in many constitutions may, however erroneously instituted, only tend to hide and confirm the mistake. The functional disorder of the cord will be kept up by the irritation of the remedy, and by confinement, until time, or accident, or the death of the patient from some supervening malady, discovers to us its real nature.

With respect to the tenderness of spine in the diseases of irritation, we have been anxious to ascertain what symptoms might be considered as peculiarly belonging to any one portion of the cord; but in this we have found much difficulty, and have not had in fact a sufficient number of cases before us to draw absolute conclusions from. The broad outlines between affections of the cervical, dorsal, and lumbar portions are, as we have seen, sufficiently well marked, but many symptoms appear more or less common to all. We have fits of sudden insensibility or syncope, for instance, occurring from tenderness of the lumbar vertebræ, although they would seem more properly to belong to irrita-

tion of the cervical part of the cord. With the hope of furnishing some additional information as to the dependence of the morbid sensibility and disturbed functions of the stomach, we more particularly noted in the tables the cases in which nausea and pain of stomach occurred.

In the cases of cervical tenderness solely, there were five of nausea or vomiting, and only two of pain in the stomach in thirty.

In the cases of cervical and dorsal tenderness, there were ten of nausea or vomiting, and thirty-four of pain of stomach in forty-six.

In the cases of dorsal tenderness solely, amounting to twenty-three, there was only one of nausea or vomiting, but there was pain of stomach in almost all.

In twenty-eight cases of dorsal and lumbar tenderness, and of lumbar only, there were only two of nausea or pain of stomach.

Thus there were 15 cases of nausea or vomiting in 76 of irritation of the cervical and dorsal portion of the cord, and only one in 23 cases of irritation of the dorsal alone; so that we may assume as a fair pathological inference, what the discoveries in physiology would lead us to conclude, that the peculiar sensations of the stomach are imparted to it from the upper portion of the spinal marrow. The same inference would not seem to follow with respect to its common sensibility, for we find that among the purely cervical cases there were only two of pain of stomach in thirty; while in those in which the dorsal cord was affected, there were fifty-seven in sixty-nine. It is very frequent to find tenderness of the upper cervical and of the eighth or ninth dorsal vertebræ in the same patient. Such cases are usually attended with both sickness and pain of stomach.

In examining the spine we shall often find, that the tenderness does not reach so high up, or so low down, as the symptoms would lead us to expect. It would appear as if the disorder of the cord extended itself internally to a greater degree than was immediately indicated by any external soreness. This at least is true of its organic diseases. Mr. Brodie and Mr. Copeland remark, of angular curvature

of the dorsal spine, that the symptoms are not always confined to the parts below the disease; the upper extremities are sometimes affected. We have heretofore given an instance of an affection of the lower part of the sacrum, in which the chief and almost sole complaints, were pains in the stomach and abdomen, with languor and debility.

From the same causes it happens, that when great tenderness prevails at a particular point of the spine, pressure on which excites cough or oppression, or distant pain, these symptoms may be equally brought on by pressure for some distance above or below the tender point. Thus in tenderness of the cervical vertebræ with headach, this symptom may be brought on, or aggravated, not only by pressure on the affected vertebra, but on any, as low perhaps as the sixth or seventh dorsal. If however there exist at the same time tenderness of the seventh or eighth dorsal vertebra, the headach can be brought on by pressure only perhaps as low as the first dorsal, below which it will occasion pain of stomach. In all these cases the morbid condition of the cord exists probably in a minor degree through the intermediate space\*.

When the whole of the spinal marrow is morbidly irritable, that is, when there is general tenderness of the vertebral column, it will be found that the soreness on pressure is more acute at one or two points. The prominent complaints of the patient always correspond with these, and may be produced by pressure on them, but they may equally be excited by pressure at almost any part of the

\* In the case of B. O'Brien, who complained of pain of stomach and cough, with tenderness of the sixth and seventh dorsal, these symptoms were brought on with equal readiness by pressure on any of the lower cervical or upper dorsal. In the case of Kitty Callaghan, who complained of headach with tenderness of the upper cervical, the headach was also brought on by pressure on any of the cervical, and on any of the dorsal as low as the sixth or seventh. In that of Mary Sheahan, who had tenderness of the upper cervical and seventh or eighth dorsal, with either headach or pain of stomach, or both, pressure from the first dorsal up excited the headach, and from that down brought on the pain of stomach.

spine. Thus in cases where the second cervical or eighth dorsal happen to be the most acutely tender of the vertebræ, headach or pain of stomach will most probably be the troublesome symptom; and either may be brought on, as it chances to be the reigning evil, not only by pressure on the corresponding vertebræ, where the soreness is most acute, but often by pressure on any of the lumbar to the very lowest. Instances may be even met of such extraordinary susceptibility, that pressure on any of the large nervous trunks, or any portion of the person which happens to be morbidly irritable, may excite or aggravate the same symptoms. A case is detailed in which pressure behind the trochanter or at the knee, excited distressing pain at the ensiform cartilage, with a disposition to syncope. Here the seventh or eighth dorsal vertebra was the one most severely affected; if it had been the upper cervical, pressure on the knee or behind the trochanter would probably have occasioned headach, or fits of insensibility. It far more usually happens however, in universal tenderness of the spine, that pressure on the different vertebræ excites some pain or disorder in parts immediately anterior, and with whose functions the portions of the cord they include are directly connected.



## CHAPTER X.

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### TREATMENT.

IN the practice of medicine, there is not perhaps a complaint which is occasionally so difficult of management, or so little under the control of our art, as irritation of the spinal cord. Nor can this be wondered at, if we consider that the true seat of the disease has been hitherto as much the subject of doubt and controversy as the treatment. Should the views taken in the foregoing pages prove correct, it will be at least an advance towards its true pathology. But without venturing to draw any absolute inferences at present, we shall simply review the history and nature of the complaint, and offer some observations which may we hope lead to a judicious mode of treatment.

One of the first and most important facts that presents itself to us is, that, like hysteria, spinal irritation attacks persons of peculiar constitutions. Though occurring to those disposed to it mostly when they are in enfeebled health, it is not a disease which can be said specially to belong to debilitated habits, since it affects the full and plethoric as well as those of spare and delicate frames: but its subjects are almost invariably persons possessing an extraordinary mobility of the nervous system. It would, we believe, be more correct to say, that this mobility is hereditary, or dependent upon original conformation, like the disposition to gout or rheumatism, than to consider spinal irritation itself as such: the state disposing to a complaint never constitutes it, and in fact may be present throughout life without leading to its developement, when not brought within the influence of the usual exciting causes. Spinal

irritation is again like gout or rheumatism, in the circumstance of its ready accession on very dissimilar and trivial excitements. Changes in the weather, mental emotion, cold, &c., to which other constitutions might be exposed without inconvenience, may occasion sudden and intense disorder in those predisposed to irritation. Lastly, it is like gout or rheumatism in the disposition it evinces, when once it has affected the frame severely, to linger long in a chronic form, or in leaving such a degree of debility behind it as often leads to a relapse.

It follows as an inference from all this, that if in any constitution the mobility disposing to this morbid state of the spinal cord could be counteracted, the complaint would never appear, at least in its genuine or exquisite form. There can be nothing to protect men so generally from it, but the usual absence of the predisposition; in this it is almost identified with hysteria.

If we pursue its analogy with hereditary or constitutional maladies, we must further infer, that, when once formed, external or local remedies, even when applied to the seat of the disease, can alone seldom effect a cure; that general treatment must assist the local; and the nervous condition that excited the irritation be influenced and altered as well as its consequences.

Finally, it seems obvious, that, as the dormant disposition to the complaint is capable at all times of being waked up, by disorder existing in any of the important organs of the body, it should be a chief object in effecting a cure, to allay or relieve such disorder.

We feel convinced those will succeed best in the management of this troublesome affection, who take this wide view of the probable exciting causes. Those who supposed it to depend exclusively on disordered functions of the uterus or of the digestive organs, will not only fail when they make wrong inferences between the two, but in every case in which the affection of any of these organs is symptomatic of a morbid state of the cord — in derangement of stomach, for instance, from dentition, or from a blow on the cervical vertebræ, or in menorrhagia from mental disquiet.

Having offered these general considerations, we may venture to speak more particularly of the treatment, as applied to the stages or varieties of the complaint; for we look upon it in every instance as arising from the same morbid condition, though continually modified by the state of the patient's constitution, the nature of the exciting cause, and the degree to which the complaint may have proceeded. The following distinction of cases, which differs little from that given by Dr. Brown of Glasgow, will be found to answer all useful purposes in practice.

Cases of pain affecting a single nerve, with tenderness at a corresponding part of the spinal column, and little or no constitutional disturbance.

Cases of a more complex nature, with tenderness of the spinal column to a greater extent, and continued symptoms of disorder in the digestive or uterine, or sometimes in the cerebral functions.

Cases of a similar description, but in which the disturbance of function in the different organs appears subsequently to other manifestations of the disease, or exists evidently as a secondary affection. These are chiefly the instances in which we observe a frequent metastasis of the diseased action from one set of organs to another.

The neuralgiæ belonging to the first class, like chronic rheumatism, sometimes continue for a great length of time without any material alteration or disturbance of the health. They approach to the character of mere local diseases, and become sometimes absolutely such, when the morbid action persists from mere habit, as it does in chronic hooping-cough. These cases are very generally relievable by local remedies, by leeching the tender portion of the spine once or oftener, and by blistering; and these remedies are more useful the earlier they are applied. It will be found advantageous to leave an interval of some days between the leeching and blistering, because, if any considerable improvement follows the abstraction of blood, it would be better to repeat it than resort at once to counter-irritation. This observation applies with more force to cases in which there exists any puffing of the integuments about the tender ver-



tebræ; and it will not unfrequently happen, that the improvement which takes place after a second or third application of the leeches is so great as to render any other very active measures unnecessary. Counter-irritation may, however, effect a great deal of good, and sometimes wholly remove the complaint, where the abstraction of blood has been of no service whatsoever. We have often derived benefit from its use, even where no depletion was premised.

This simple treatment, it must be obvious, is only applicable to such cases of spinal irritation as are of limited extent, and exist independently of the cause which occasioned them. When pain of side or at the ensiform cartilage, for instance, is brought on by irritation at the origin of the seventh or eighth pair of dorsal nerves, and that this irritation is still kept up by a state of pyrosis, by a worm in the stomach, or by mental anxiety, it is not to be expected that any remedies purely local can accomplish a cure. Neither in similar complaints, which persist from mere habit, though they may often succeed, can they be considered so appropriate or effective as measures calculated to act generally on the nervous system. In the former instances, the cure is to be found in the removal of the cause; in the latter, it is to be attained by diminishing the preternatural sensibility, or altogether altering the morbid action on which the habit depends. Narcotics, as the extract of belladonna or cicuta, or the metallic or vegetable tonics—among the best of which may be named the carbonate of iron and sulphate of quinine—are well adapted to the accomplishment of these objects. It is more necessary to request our reader's attention to the observations just made, because, since the subject of spinal irritation has become a matter of interest and inquiry with the profession, a general impression seems to have prevailed, that it was always relievable by local treatment. The consequence of this has been, frequent disappointment in its results; and practitioners have even, in some instances, altogether rejected the opinions regarding the morbid state of the spinal cord, because it did not yield to remedies suggested by an erroneous notion of its nature. We are very much of Mr. Aber-



nethy's mind respecting local diseases; few of them indeed can be strictly so called, but especially those consequent to some specific diseased action, or dependent on peculiarity of constitution. Rheumatic inflammation of the synovial membrane of the knee-joint, when it has become chronic, and as it were outlived the general rheumatic diathesis, is a local complaint, and most under the control of local remedies; yet the cure is nevertheless greatly accelerated by constitutional treatment suited to the specific nature of the disease, and sometimes cannot be accomplished without it.

There are so many obvious reasons for a morbid state of the spinal cord or its membranes resisting the remedies employed for its removal, that it appears preposterous in the extreme to draw inferences against its existence from their failure. If it be looked-upon merely as a local affection, those remedies may be unadapted to its cure, or the disorder may have become so confirmed as to yield only with difficulty and time; or, as we have before said, it may depend on disorder or sources of irritation in other organs. Mr. Brodie very truly remarks of these latter cases, that it is not to be supposed any permanent benefit can arise from applications made to the part to which the symptoms are referred, the cause on which they depend being elsewhere. "If you would cure your patient," says Mr. Brodie, "you must, in each individual case that comes before you, study the disease pathologically. Endeavour to trace the symptoms to their true origin; and if you can succeed in doing so, you will in many instances learn at the same time in what manner a cure is to be effected; while in others, in which the disease does not admit of a cure, you will learn this also—to avoid tormenting your patient with useless remedies; and at any rate you will be satisfied you can do as much for him as your neighbours."

Cases of recent occurrence, especially when the cause is obvious, are seldom difficult of cure. When only of two or three weeks' standing, they are sometimes perfectly relieved by an active purgative, which is analogous to what is observed in hysteria. The most perplexing of those simple

neuralgic affections which come before the practitioner, is pain of stomach, with or without pyrosis. This is occasioned by such a variety of causes, and seems to exist in such different states of that organ, that it is exceedingly difficult to define with any accuracy the distinguishing symptoms, not only between gastrodynia dependent upon irritation of the spinal marrow, and that occasioned by irritation of the capillary expansion of the nerves in the organ itself, but sometimes between either of these and subacute or chronic gastritis. It has been a subject of great regret with us, that, after an unusual experience in these complaints, we have not been able to form more accurate inferences either as to the diagnosis or treatment. Disorder and pain of stomach are of all others the most prevalent complaints among the peasantry in this country, occasioned in many instances by the disagreement of their vegetable diet, in others by the use of ardent spirits: but it is manifest, as extern patients at a dispensary, they could not derive its full benefit from medicine, nor furnish the physician with any satisfactory conclusions from his treatment. No attention whatever could be paid to diet; and frequently the food upon which they continued to live, if it did not increase the malady, served at least to mar every attempt at cure. It is in hospitals only, or in private practice, that inferences free from error can be made; and in either, unfortunately, they are seldom met with in sufficient number to admit of generalizing our observations.

The distinctions in gastrodynia, proposed by Dr. Abercrombie, and his conjectures as to the probable cause in each variety, seem so accordant with general pathology, that they necessarily claim considerable attention. To the unfortunate situation in which our patients were for the most part placed, we may perhaps attribute our frequent failure in the adoption of the remedial measures he recommends; though indeed, under any circumstances, he candidly acknowledges that it is difficult to say what remedies are best adapted to the different forms of the complaint. Although its management must as yet with every one be very often empirical, it sometimes presents itself to us with

features so marked, as to suggest at once the appropriate plan of cure.

How frequently pain of stomach is connected with a morbid state of the dorsal portion of the spinal cord, we may infer from the number of cases stated in the table in which it occurred along with tenderness of the seventh or eighth dorsal vertebra. Out of sixty-nine cases of affection of the cervical and dorsal portion, there was pain of stomach in fifty-seven. Indeed there is no part of the spinal marrow that seems to be the centre of such general sympathy, as about the situation of the eighth dorsal vertebra. If a nervous or hysterical woman hears unfortunate news, if the catamenial flow is interrupted, or if the uterine action in advanced pregnancy becomes too powerful for the system, we believe there is no part so readily affected as the centre of the dorsal spine, no complaint so usual as the concomitant pain of stomach\*.

It will always be proper, in cases of simple gastrodynia with spinal tenderness, to try the effect of the local treatment already recommended — leeching and blistering — provided the tongue is not coated, nor indicative of much derangement in the digestive organs. If these do not succeed when applied to the spine, they sometimes will by placing them on the immediate seat of the sympathetic pain. We have in this way seen a blister to the epigastrium succeed in allaying the pain, after failing on its application to the tender spine, as we sometimes see blisters to the knee of more use in allaying the pain proceeding from ulceration of the cartilages of the hip-joint, than if applied directly to the true seat of the disease. We cannot pretend to account for these things — they are among the mysteries of the nervous system.

\* This symptom in advanced pregnancy, we may observe, should be by no means neglected. It is especially, when connected with a febrile state, indicative of a high degree of nervous irritation, which may possibly bring on premature labour; but, independent of this danger, it may, and frequently does, continue after the patient's confinement, exciting that general and obstinate affection of the spinal cord of which we have given so many illustrations.

When pain of stomach appears as the sole symptom in chronic cases of spinal irritation, it is not altogether of so much importance with regard to medical treatment as at an earlier stage: it is then probably dependent on the establishment of a morbid habit; and when it yields neither to general measures, nor to mild local means, it will be far better to temporize with it, — to quiet uneasiness or lessen the sensibility by extract of henbane or small doses of opium internally, or by the application of belladonna plaister, — and to employ any means that may be useful in improving the patient's general health.

There are other cases of this complaint, where the source of irritation is in the stomach itself: it may be worms, it may be the presence of acrid juices, or the mere stimulus of the common contents when there exists a preternatural sensibility of the mucous membrane from previous morbid action. Of course these varying causes require a different and appropriate treatment. In cases, probably belonging to the two latter, we have found occasional benefit from the use of the carbonate of iron and compound powder of jalap, in equal proportions, made into an electuary, and given in the dose of a teaspoonful three times a-day. The oxyd of bismuth, or small doses of opium and gum kino, are also advantageous; and we have sometimes seen relief from the acetate of lead, given, as Mr. Gardiner recommends it, with the dilute acetic acid, in doses of two or three grains three times a-day. But all these remedies have seemed very inferior in efficacy to a popular one among the poor in this country, which we have fallen upon by accident—the super-sulphate of alumen. We first saw it used in the case of a patient afflicted with pain of stomach, sometimes occurring in violent paroxysms, and accompanied by vomiting and pyrosis. There was great tenderness at the pit of the stomach, and in the right hypochondrium. The complaint had subsisted long, and he had been under a variety of treatment with little benefit. It was, in fact, eventually supposed to depend on serious organic disease of the liver and of the stomach. About this time, however, he was prevailed on, by a friend of his, to take an ounce of alum in a



dose. It acted as a purgative, and gave such immediate relief, that he was induced to repeat it. The benefit he again experienced was very considerable; and, by persevering in the remedy, a cure was eventually effected. He has since, at long intervals, had a disposition to a return of the complaint, but not to any distressing degree. Latterly, he has been in the habit of substituting for the alum, half a wineglassfull of vinegar when threatened with an attack, and with equal success. This latter is also a popular remedy; but probably his chief reason for resorting to it, was the disagreeableness and difficulty of swallowing such large doses of alum.

We some time afterwards met with another case, in which the alum effected a cure. A woman, who had been long suffering with pain of stomach and pyrosis, took a tablespoonful of it powdered, and mixed with sugar, twice a-day. She made use of it only two or three days, when she had the greatest relief, and had no return of the attack for months. We believe a tablespoonful is the dose usually prescribed among the poor; but so large a quantity, if generally ordered, would, we should imagine, be occasionally attended with unpleasant effects. Fortunately, it is effective in much smaller doses. We have been in the habit of prescribing it in the proportion of a teaspoonful of the powder twice a-day, with two aloetic pills every night, and have been perfectly astonished at the great relief it has given; acting in some instances like a charm on a state of disorder which has resisted other remedies for years. It is, however, perfectly useless in the very minute doses in which it is commonly prescribed.

The success with which these and other similar medicines are occasionally exhibited in cases of gastrodynia and pyrosis, accompanied by tenderness in the epigastrium, gives us a tolerable assurance that they are not always, nor even commonly, dependent on any inflammatory state of the mucous membrane. They are evidently connected with disordered functions of the nerves, which, though sometimes arising from a cause acting within the stomach itself, is more frequently attributable to irritation at the dorsal

portion of the spinal cord. We have lately had a convincing proof of the probability of this dependence, in a case of organic affection of the spine, with angular curvature and tenderness of the eighth or ninth dorsal vertebra which came before us. The patient had almost lost the use of his lower extremities; but his chief distress was from the constant throwing up of a clear and very acrid liquor from his stomach. It would be advisable therefore, in cases of gastrodynia or pyrosis with spinal tenderness, even where local treatment—such as leeching and blistering—have in themselves been inadequate to the cure, to employ it as an adjuvant to other measures.

We are, in these observations, not seeking to overlook among the varieties of this affection that form of it which is manifestly produced by subacute or chronic gastritis. It is chiefly indicated by a general febrile state; a loathing of food, with a red tongue, or in our mind sometimes a white one thickly furred; and by excessive tenderness in the epigastrium. In these cases, of course, the inflammatory state of the mucous coat of the stomach demands the chief attention, and the direction of the diet becomes an indispensable object.

In the second class of cases of spinal irritation, in which a greater extent of the cord is engaged, and which are preceded or attended by disorder of some important organ, the treatment must of course be regulated by reference to the particular one affected. If the brain be disturbed, or affected with pain or other troublesome symptoms from mental distress, it must be relieved by such measures as the situation of the patient may suggest. If the digestive functions are disordered, we may adopt Mr. Abernethy's or Dr. Hamilton's plan of treatment, or a combination of both, as the complaint may seem to demand. If there be obstruction of the catamenia, or menorrhagia, or leucorrhœa, the usual remedies in these disorders must be resorted to.

It is needless to take up the reader's time on points so well understood, but although they are to form the principal objects of treatment, those which we regard as secondary

are not unimportant. The irritation of the cord, though at first a mere symptom, may have grown into an independent malady; but even as a symptom, if wholly neglected, it may act on the original affection and thus retard the recovery. All that can be useful in these instances must of course be included in the treatment of irritation of the spine, existing as a primary malady, which we are now about to consider.

Those cases may be properly looked upon as primary affections, in which the indications of disorder of the spinal cord precede those of any other organ, or in which the disorders of other organs are temporary and alternate with one another, or in which they are so trivial in degree as in no way to account for the serious and complex train of symptoms usually occurring in such complaints. If it be known that a patient has suffered at any former period of her life with a similar nervous disorder, the diagnosis becomes easy: a circumstance of no slight importance, when it is considered that it is at the commencement only there is a probability of arresting its progress even by the most judicious treatment\*.

Perplexing as this subject necessarily becomes, where there is no known remedy possessing any specific influence over the morbid action in the cord on which the symptoms of disorder depend, many valuable hints may be gathered from the consideration of the history and character of the complaint. Our experience would lead us to suggest some very opposite indications in its management, as applying to the period at which it falls under treatment. In its early, and what we should call curable stage, there is not as yet that confirmed susceptibility of irritation, that established habit, which while it bestows on the nervous system a preternatural sensibility to all common stimuli, renders it

\* It is this complaint, of whose tedious and intractable character Dr. Monteith has given some extraordinary examples, and over which Dr. Abercrombie observes, "it is difficult to say, what remedies have any decided control." Mr. Burns of Glasgow declares, that in most cases he has not seen decided advantage from any medicine beyond what was required for symptoms as they arose, time appearing to be the chief remedy.

dull and inapt to the influence of medicine. This is the time for active treatment, at which every symptom, every possible cause of irritation or disease, should be strictly inquired into. We feel convinced hundreds pass through years of delicacy and suffering from misapprehension and mistreatment at this early stage of the complaint. We have seen many instances of this ourselves, while we cannot bring to mind a single bad and protracted case, that had been properly managed at its onset. The cure may perhaps frequently prove difficult and teasing under the most skilful direction, but it will, we venture to assert, be almost always accomplished within the space of a few weeks.

In the more advanced or confirmed stage of this disease, on the contrary, it does not appear that active measures, such as are directed to the absolute control of the complaint, accomplish any good whatever. We shall find on trial, that remedies of exceeding value in some cases, prove wholly useless in others, for no other reason than that they are employed too late. Nay, we shall not unfrequently find that our patients are all the worse for having resorted to them, and that the best practice consists in ministering to symptoms as they arise, and trusting to time and our vigilant care of the general health for recovery. This perhaps may not strictly apply to cases that have been wholly neglected, or in which no influential treatment whatsoever has been instituted.

There is yet a third stage, in which the disease has absolutely worn itself out, yet the habit, the nervous susceptibility, and morbid action attendant on it remain. It is of some importance to detect the period at which this occurs. It may be after the lapse of months or even years, as the constitution of the individual or the degree of the disease may determine, but we believe it is usually much sooner than its lingering character would lead one to expect. At whatever time it took place, a relinquishment of the palliative plan, and a cautious return to more active management, may save the patient another year or two of suffering.

To return to the treatment of the complaint in its earliest



stage, it may be inferred, from what has been already stated, that even where it would seem to exist as a primary affection of the cord, we are not at once to conclude that local remedies are the most appropriate. We shall have the same reason to consider the state of the patient's constitution, and the nature and degree of the local affection in relation to one another, as we should in the treatment of a rheumatic knee or ankle joint, and it will be found that our attention cannot be limited to either, in the successful management of the disease.

It has been our practice in almost all cases to regulate the stomach and bowels before instituting any local treatment. This may sometimes be found to give so much relief, as to prevent the necessity of any applications to the spine, but it will at all events materially contribute to the success of subsequent measures. We usually at first give a full purgative or two, and then adopt the alterative plan; but if the complaint be one of long standing, if the disorder of the cord, as denoted by its effects, be out of all proportion with any appearing in the digestive functions, or if the endeavour to improve these latter has already proved unavailing in other hands, it will be proper at once to give depletion by leeches and counter-irritation in some shape a fair trial. If the tenderness of spine be not very diffused, and the symptoms not complicated, these will probably be found of very essential service: there is nevertheless some caution to be observed in the use of both. The abstraction of a large quantity of blood in these, as in cases of strumous inflammation, is almost always hurtful, and should be guarded against even in the application of leeches. We should determine the quantity of blood we deem it judicious to take away, and proportion the number of leeches to the necessity. The bites should never be allowed to bleed for hours after the leeches are removed; the quantity taken in this way is most uncertain, and often vastly beyond what we might conjecture\*. In a case of affection of the bladder

\* In a case of croup affecting a child two years old, which I lately attended, four leeches were applied, the bites of which continued to bleed freely after their removal. As I was anxious to ascertain how long I might permit the bleeding to go on with safety, I held a tea-

from irritation of the lumbar and sacral portions of the cord, a lady had twelve leeches applied to the sacrum, and the bites were allowed to bleed through the greater part of the night afterwards. Towards morning she was in repeated fainting fits, and although the affection of the bladder was relieved, it was only by a transference of the diseased action to some other organ. She was in fact all the worse for what had been done, and suffered excessively for months after with dreadful headaches, hemorrhages from the nose, fits of hysteria, and sleeplessness.

With respect to counter-irritation, if effected by blisters, they should be long and narrow, so as to cover many of the affected vertebræ. We cannot say that we have had any

spoon under two of them, and collected half a drachm of blood in three minutes, which was at the rate of more than two ounces an hour for the four. As I did not desire to take more than four ounces of blood from the child, and the leeches had already taken two, I accomplished my object pretty accurately by allowing the bites to bleed only for one hour. If leech bites in general bled at this rate, what a quantity would be lost from sixteen of them, supposing they all kept open! About eight ounces an hour, or thirty-two in four hours. Dr. Graham of Edinburgh was accustomed to declare in his lectures, his belief, that bleeding by leeches sometimes produced a depression of the vital powers far beyond what could be accounted for by the mere loss of blood, and seemed to imagine it was the result of some poisonous influence. We do believe in arriving at this conclusion, Dr. Graham underrated the quantity of blood abstracted by leeches, and that their not inducing the depression he speaks of more frequently, arises from their application being mostly confined to inflammatory cases, in which the system is capable of enduring a great loss. It may also be attributed to the circumstance of the closure of a great many of the bites when the leeches are removed, to the slow manner in which the blood is drawn, and, perhaps, to its seldom flowing at so rapid a rate as we have mentioned. There is a vast difference between individuals in the disposition to hemorrhage after the removal of these animals, depending, no doubt, on the greater or less delicacy of organization and vascularity of the skin. We have known it peculiar to a whole family, in any of whom it was exceedingly difficult to suppress the flow of blood for some hours. As medical practitioners sometimes meet with a great deal of trouble and perplexity in these cases, the application even of caustic occasionally failing, it may be worth mentioning, that passing a cambric needle and thread through the lips of the wounds, and drawing them together by ligatures, will be always found successful, and is by no means a painful remedy.

reason to be prepossessed in favour of very small ones, such as Dr. Brown of Glasgow seemed to think useful. In many instances the constitutional irritability is so great, that the excitement produced either by blisters or the tartarized antimonial ointment, proves prejudicial, and may occasion much mischief if persevered in. It does sometimes happen, however, that the patient becomes worse only while the excitement of the blister lasts, and evinces manifest signs of improvement after it passes away; here of course the remedy may be repeated, but not until the feverish disturbance has perfectly subsided, and not at all if the improvement has been so great as to warrant us in hoping the cure may be completed by less distressing remedies. In cases where blisters have proved hurtful, it is especially probable, that moderate depletion by leeches would be attended with advantage.

As one of the most marked characters of this disease consists in the preternatural sensibility, or what has been called mobility of the nervous system, it must be a chief object to diminish it, and although we know of no medicine which possesses the power of effecting this permanently, any of the usual narcotics may accomplish it for a time. Opium, henbane, or belladonna may be tried. The two last are the least exceptionable, as they may be continued for a considerable period without injuring the health, or interfering with the action of remedies from which a more lasting improvement is expected. The extract of belladonna mixed with an equal proportion of soap plaister, and applied to the tender part of the spine, or to any organ suffering from pain, will be also found useful as an external application.

In functional affections, relieving pain is not always to be considered as a mere palliative measure. The cure of pain, especially when it is of a periodical character, we shall often find is the cure of the disease. The irritations and even the inflammatory actions of the system seem so intimately connected with sensation, that the former may be very often subdued, and the latter considerably relieved, where we have it in our power to dull or diminish it. In fact, if this could be as perfectly effected in cases of acute in-

flammation, as it frequently is in neuralgic attacks, we much question whether that state could progress or retain its other characters of acute disease. In intermittent pain, it is of much importance to recollect, that a very mild dose of medicine may prevent its recurrence, if given in the interval, which in any quantity will prove unavailing if the fit has once regularly set in. Whatever remedy is selected should be made use of before the access of pain. There is a very interesting case of intermittent ophthalmy, related by Dr. Curry in the *Medico-Chirurgical Transactions*, which is strikingly illustrative of this. Two grains of opium, taken previous to the access of the paroxysm, gave perfect protection during two nights from the most excruciating torture, but when on the third the dose was deferred, to ascertain whether the pain would come on again, which it did, ten grains taken within a few hours did not give the slightest relief.

Friction of the spine along its whole length for a considerable time daily, has been employed by most practitioners who have directed their attention to this complaint. It will sometimes be found a good substitute where blistering disagrees, and occasionally gives more relief than any other remedy. It is not very uncommon to hear patients say, "The rubbing has done me more good than all the medicine I took from the commencement." It seems particularly useful in abating the morbid sensibility in the vertebral column, which is so striking on pressing certain portions of it. But, like every other remedy, in many cases of spinal irritation it will be found wholly unsuccessful.

The benefit derived from issues in the cure of structural affections of the spine, readily suggested their employment, in the less serious disorder which we are considering. Mr. Burns and Dr. Brown of Glasgow have generally recommended them in its severest forms, and we have ourselves seen them occasionally useful. They are, however, sometimes calculated to do much mischief in the earlier stages of the affection, weakening the system by the continued excitement which they occasion, and keeping up the irritation which they were intended to remove. Very many



patients, we believe, would have recovered by mere change of air, the use of the shower bath, gentle exercise, and care of the general health, who have been doomed to months and years of suffering in consequence of the insertion of issue peas. The very nature of the habits in which spinal irritation occurs is commonly unfavourable to the action of issues, a fact well illustrated in the writings of the late Mr. Abernethy. He details several cases of paralysis or weakness of the lower extremities, dependent on spinal irritation, or, as he explained it, on constitutional disorder acting through the spinal cord without the intervention of the brain, in which there was an immediate improvement on the healing up of these drains. The truth is, counter-irritation in any shape for these disorders of the nerves or nervous masses can only be looked upon as an adjuvant in the cure, and as such not always, nor perhaps very often applicable. The temporary stimulus of a blister in the neighbourhood of a strumous eye, may sometimes effect much good; but who would trust to it alone, or who would insert issue peas in the neck for it, before he had endeavoured to improve and restore strength to the morbid habit by the usual means? We do not wish exactly to proscribe this remedy in the complaint, because we know it has at times proved useful in protracted cases, but we are totally averse to the practice of consigning a young lady to issues and a deal board, for mere irritation and tenderness of the spine, however distressing may be its effects.

This brings us to speak of the recumbent posture, which has been also considered necessary to the successful management of these cases. We were at one time inclined to attribute their difficulty of cure among the lower order to the impossibility of making it a part of the treatment with them; but experience eventually convinced us, that it is not only unnecessary in the generality of instances, but absolutely injurious, at least in the rigid way in which it is often practised. When the patient is suffering very acute pain in the side or stomach, when the spinal tenderness is great, and relief is felt on lying down, reclination for some hours a day on a sofa or mattress may be necessary; but

even in such cases it should not be persevered in for any length of time; gentle exercise should be again gradually resumed, and though avoiding all unnecessary exertion, the patient should slowly return to ordinary habits. The morbid sensibility of the spine which occurs in all protracted cases is kept up, as it is in joints affected with chronic rheumatism, by perfect rest. In fact, this complaint, though specifically different from rheumatism in its nature, bears a striking resemblance to it in many respects. It is like it sometimes benefited by local, sometimes by general remedies; and sometimes when it proceeds uncontrolled by any, it will yet wear away with time. Like rheumatism, rest is beneficial in the acute stage, injurious when it becomes chronic; and in many instances, as in that complaint, exercise is absolutely necessary to the cure.

In the case of a young gentleman, already related in these papers, there was such extreme sensibility of the spinal column, that a slight touch would almost bring on syncope: he recovered however by time, without giving up or even altering very active habits of life. On the other hand, in instances in which reclination and rest had been early enjoined, we have seen such acute sensitiveness to the slightest motion induced, that years elapsed before the patient could be permitted to ride in a carriage with safety. It is of some consequence to be aware of this, as a patient who has once found relief by lying down, readily imagines recumbency is necessary for her cure. Indeed, when the complaint has gone yet further, and she finds all her sufferings exceedingly aggravated by any attempt at motion, she becomes so convinced of it, that even her medical attendant may experience difficulty in inducing her to persevere, and what is worse, it may be too late to succeed in her endeavours. The suspension of the usual exercise and recumbency in spinal irritation, should be enjoined like darkness in strumous ophthalmy, only in acute cases, and for a very short period. Motion in the former, like light in the latter, may be extremely disagreeable and distressing to the patient, but she must be gradually inured to it, if we would preserve her from a tedious and miserable confinement. This error

of enjoining perfect rest, prevailed much formerly with respect to gout and rheumatism: people were left cripples for years by carefully avoiding all motion of the painful joints, when friction and exercise were all that were wanting to their recovery. In all severe cases of spinal irritation, as we have already said, reclination for a few hours in the day may be recommended, but as the disorder mitigates, the period of rest should be shortened or occasionally interrupted. It may be sometimes more advantageous, instead of enjoining the recumbent position for many successive hours in the day, to direct our patient to lie down, for an hour or two, whenever the pain is unusually troublesome or fatigue is experienced.

A great many cases will yield to the judicious employment of the means we have recommended, but if the symptoms do not soon give way, or evince an obstinacy of character, there is great danger, whatever the previous health of the patient may have been, of the complaint running into that chronic intractable state, of which we have offered such melancholy illustrations. We must necessarily here look for medicines capable of controlling or altering the morbid action going on in the spinal cord; opium, belladonna, cicuta, mercury, the salts of iron, and some of the vegetable tonics, have been tried with very various success. The carbonate of iron has been sometimes found useful in doses of half a drachm or a drachm three times a day; in other instances the sulphate of quinine has appeared to answer better. We have found a combination of it with extract of cicuta and henbane, succeed better than when it has been exhibited alone. Prussic acid has occasionally been of service, especially when the stomach was affected with nausea or vomiting. The arsenical solution we have never fairly tried, at least not often enough to form an opinion of its merits, but this, or the salts of copper or of lead, may in many perplexing cases prove beneficial. It is indeed probable, that the remedy for spinal irritation will yet be found among some of the metallic or vegetable tonics. When we witness the extraordinary power of quinine in interrupting the most confirmed ague, or of the solution of arsenic, or

of nitrate of silver, or of ammoniaret of copper, in preventing the return of paroxysms of epilepsy, we may surely hope, under proper management and application, that some such medicine will be found to effect the cure of affections dependent, like these, on disorder of the nervous system, and not on organic disease\*.

Of all the remedies which we have made use of, in severe cases, mercury was certainly the most successful. We were first induced to try it from its beneficial effects in instances, where spinal irritation was mistaken for a liver complaint, to two of which we may refer. It will be perhaps a matter of dispute whether in these, an affection of liver did not really exist as the primary malady; but we believe it will be found, that mercury frequently possesses some specific influence over disorder of the cord, whether connected with disease of liver or not. The hard, loud, hacking cough, which is so often a troublesome symptom, will sometimes yield to a mild mercurial course where every thing else has failed. We regret that our experience of its effects has been as yet too limited to permit our recommending it as very generally applicable; but even if it should prove so, it ought to be held in remembrance, that there are many constitutions either so enfeebled or peculiar, as totally to preclude its employment.

. When those symptoms which may be considered as incidental to protracted disorders of this nature occur, such

\* We were consulted some time since in a case of epilepsy affecting a boy eleven years of age, connected with great irritation at the upper part of the spinal column. There was excessive tenderness at the upper cervical vertebræ, and it so perfectly resembled, in other respects, the cases of epilepsy in which abstraction of blood from the head and blistering the neck proved so successful, we had not the slightest doubt of the boy's recovery, by his resorting to these remedies. He was directed to apply a dozen leeches to the nape of the neck, and on the succeeding night to blister. His mother had, however, a prescription from a friend, who extolled its virtues so highly, she was anxious to resort to it in the first instance. It was an electuary formed of equal parts of gunpowder and pewter filings, mixed with treacle, of which a teaspoonful was given twice or three times a day. The boy had not taken it very long when he became perfectly well.



as fits of screaming, of coughing, or of oppression, continued faintings, violent throbbing headaches, or convulsive paroxysms, the usual remedies in hysteria must be resorted to, æther, assafœtida, opium, valerian, &c. Nervines and antispasmodics will indeed be found useful occasionally throughout the course of any protracted illness of the kind, but they should not be depended upon as an ultimate or efficient means of cure.

When symptoms apparently indicating local inflammation arise, either in the progress of spinal disorder or in constitutions known to be disposed to it, active depletion, and especially bloodletting, should be made use of with very great caution. These in most instances are the result of nervous irritation, and may perfectly simulate inflammation of any organ in the body, as we have before shown. If large abstractions of blood be resorted to, in their treatment, a temporary relief may be obtained, but in a few hours or less, the symptoms recur, perhaps in an aggravated form, and if the depleting plan be persevered in, the patient will be brought into a state of extreme danger. At best a degree of weakness and irritability will be induced which cannot be soon removed, and may probably protract the disorder for months. The use of mild narcotics and diaphoretics, with due attention to the bowels, will generally be found to give relief in these pseudo-inflammatory attacks. They are never dangerous, though very apt to recur or become tedious. It has been before observed, that bloodletting in small quantities is sometimes of permanent service, but this assertion chiefly applies to habits which are full and irritable. In all cases in which it is thought right to resort to venesection, Dr. Marshall Hall's recommendation to keep the patient in the erect posture during the operation should be attended to\*. When the physician has much reason to hesitate in detracting blood, it will however always be safer practice to trust to the employment of calomel and opium

\* The investigation lately undertaken by Dr. Graves respecting the effect of posture on the pulse in disease, is likely to furnish us with further means of forming a correct opinion as to the advantage of depletion in these affections.

two or three times in the day, than to treat a disease as one of active inflammation which depends altogether on irritation.

With regard to diet, it is impossible to offer any recommendations which could even generally apply. It should be of a light, nutritious, unstimulating nature. Sometimes a strictly vegetable diet will be found to answer best. In those cases, for the most part, a hacking cough or pain of stomach are among the distressing symptoms, and are rendered much worse by the smallest portion of animal food, and occasionally by any solid whatsoever. The young lady (Case I.) lived for five years on milk, and in the summer time a little ripe fruit, peaches or cherries. During all that time she was unable to bear solids, in any shape, and could seldom take even broth or jellies. To many patients however it will be found, that generous living is essentially necessary. We shall now and then meet with cases, in which in the course of the complaint a great avidity is evinced by the patients for wine and stimulants. Although this is connected with general delicacy of habit and debility, it is not absolutely dependent on either, but on a morbid state of the eighth pair of nerves, probably at their origin: such patients may require support, but the proportion of wine allowed them should be very limited; and if the feeling of sinking is great, it may be relieved by small opiates. Wine does not always, nor perhaps generally agree in protracted irritation of the spinal cord; its effects should be always watched, and if it is frequently followed by heat of skin, thirst, or headach, it should be exchanged for some tonic of a less stimulating nature.

The tepid and cold shower, and the open sea baths, have been supposed to possess considerable power in lessening the irritability of the system and altering the morbid action on which these disorders depend. Dr. Abercrombie mentions of the lighter cases, that he has found the most effectual treatment to be, regular but moderate purging with sea-bathing. The last, as it includes change of scene and air, is of course preferable to the simple shower bath, but this, either tepid or cold, will prove a useful adjuvant to

other measures where patients cannot be removed, and seldom disagrees even in weakly habits.

But of all the measures by which diseases of irritation may be relieved or removed, none are so influential as those which act through the medium of the mind. This mode of influencing many affections of the system has been too much neglected, chiefly perhaps because the more powerful emotions of the mind are not so manageable with the physician as articles of the *materia medica*. But if we consider for a moment how extraordinary are the effects of even the light and transient feelings which we have it continually in our power to excite or dissipate, we must be convinced, that, in setting them aside, we are often abandoning the sole means by which recovery is to be effected. The magical effects sometimes witnessed on change of air, are, we believe, for the most part attributable to the influence of change of scene and place on the mind; and are only to be equalled by the extraordinary amendments or recoveries which occasionally take place from mere mental emotion.

We have seen a patient, weak and emaciated, harassed with cough, despaired of by her friends, and deriving no relief for months that she was under the care of experienced physicians, recover, as if by charm, on removing a few miles into the country. What, we may ask, were the agents in so sudden and so wonderful a cure? — sensations that the heart showed no consciousness of, and ideas impressive only from their novelty! There were no powerful excitements, no violent passions or emotions in operation, nothing but the quiet and agreeable, the silent working of new feelings, new trains of thinking; and the result of this diversion of the mind from its former depressing reflections, diminished sufferings and renovated hopes. Shall we wonder that so much should be effected by such apparently disproportionate causes, when we consider how slight an emotion will bring tears to the eyes, or throw the frame into convulsive fits of laughter. It is of course admirably ordered, that even a violent temporary emotion, in a state of health, leaves no permanent trace behind it; but a succession of similar



movements in the mind, whether joyous or sorrowful, will, however slight, if it last long, occasion physical changes both in the external expression and internal constitution of the individual. A prolonged succession of depressing reflections soon leaves lines in the countenance and a waste in the body; while those of a contrary nature give light and gladness to the looks, and health to every function of the frame. The slow effects of these milder emotions are not so obvious to common observation as those of more powerful ones. People every day behold fear arrest the pangs of toothach, and joy occasion fainting; but they cannot trace so clearly the dependence of slow recovery on uninterrupted cheerfulness and amusement of mind. Yet those who investigate the subject must feel as convinced of the one as of the other.

It follows from all this, that change of scene, and sometimes even of society, becomes a necessary part of the management of cases that are beyond any others influenced by the operations of the mind. Whenever the complaint seems to baffle the effect of medicine, and that the constitution and circumstances of the patient admit of it, she ought to leave home, removing to the sea-side if she be in an inland situation, or inland if her usual residence be on the coast. It matters little, however, where the removal is made to, so the change is striking, and the objects sufficiently novel to divert the mind from old associations. Perhaps an easy tour through parts of the country which have never been visited, and long enough to secure a permanent impression on the frame from the new and agreeable excitement, may effect our purpose better than an actual rest in any place. Even where a mere change is sought for, an amusing country should be always selected instead of a bleak or dreary one. Physicians, at agreeable watering-places, are often indebted for their fame to these adventitious assistants, in the recovery of their patients. We recollect at one time having been consulted by a lady on account of a harsh loud cough with which her daughter was affected. It depended on irritation of the upper dorsal portion of the spinal cord, and was in fact but a slight recurrence of a



very formidable attack of the same nature which she had had twice before. In the first, a variety of treatment was employed—purgatives, leeching, blistering the spine, tonics, &c.; but no real good was attained, and no diminution of the violent cough, until she was placed under a mild course of mercury. In the second attack, which occurred a few months after, and, like the one we were now consulted about, was uncomplicated, and depended upon irritation of a very limited portion of the cord, a cure was effected by sulphate of quinine and cicuta. As it appeared in the present instance to have arisen from mental depression, and was attended by no other sign of ill health than that hysterical irritability so common in young females, we were willing to try whether it might not be removed through the instrumentality of the mind, by which it had probably been brought on. It was therefore recommended that no notice whatever should be taken of her complaints, and that she should be allowed to go into company and mingle in the general amusements from which the engagements attendant on her education had much excluded her. It was only insisted on, that her hours should be regular, and her time for retiring to rest early. In less than a week, a harsh loud cough, something resembling chin-cough, but without the hooping, completely subsided, and the young lady became perfectly well. Had such a case as this been treated by the routine practice of blisters, expectorants, syrups, &c., we feel fully convinced it would have gone on from bad to worse, until the patient reached a state from which the most skilful treatment could not restore her for months, or perhaps years.

In all the slighter cases of spinal irritation, or those in which a great advance has been made towards recovery, it may often become a question with the practitioner, whether the adoption of this mode of cure might not be preferable to the administration of medicine. When there is no symptom present which materially disturbs the general health, or is likely to lead to organic disease, it may always be tried with safety, however distressing the sufferings; and it will often be found that no opiate will give such permanent

relief, as the simple direction to the patient to exercise a little resolution, and totally disregard her pain. We may refer to those severe neuralgic affections, so closely resembling disease of the hip-joint, described by Mr. Brodie; which he tells us always recover most rapidly when wholly unattended to, but are sure to become troublesome if the patient or her friends are anxious about them. There is a case related by Mr. Travers, in his letter respecting the celebrated recovery of Miss Fanshaw, in which a lady, after having been ineffectually treated for a length of time by medical men of high repute, was at last perfectly and rapidly cured by an experienced practitioner; whose only prescription was, that she should pursue her former avocations, and never think about her pains\*.

It is not very difficult to distinguish the instances or the period of the complaint in which this plan may be adopted with success. The patient's appetite is generally pretty good; and even when it is not so, there is no emaciation. She is nevertheless continually complaining and alarmed about herself. She evinces a propensity to watch and exaggerate every painful sensation, and will never allow that she is really better. The inequality of her manner is also very characteristic of the complaint. If her mind is interested, or if she is alone or thinks herself unnoticed, she is cheerful and occupied; but all the contrary if her complaints are inquired about with any appearance of condolence. This does not proceed from any desire on the part of the patient to practise deception, but from a morbid sensibility imparting pain to the most common movements of the person, which originated perhaps in illness, but is perpetuated and increased by an habitual and ill-directed attention to every sensation. To succeed in the management of such cases, it is necessary that the patient should have the confidence of the practitioner, and be assured of eventual and perfect recovery. Of the influence of hope and confidence in the cure of these disorders, we believe the case of Miss Fanshaw might be stated as a remarkable

\* See Edinburgh Review.

instance. It was evidently one of protracted spinal irritation. These extraordinary functional disorders of the cord, which sometimes confine patients to their beds longer than structural affections of the vertebral bones, did not, at the time her case was discussed, claim sufficient attention to have been offered in explanation of the recovery.

Of the powerful influence of the mind in controlling them, we have sometimes strong evidence in the sudden cures performed by mental shocks, just such as in a state of health might produce the complaint. We remember the case of a poor woman, who recovered from a severe attack of irritation of the cord on the death of an only little boy. Intense mental emotions, like the more powerful poisons, are of course too much beyond the control of the physician to render them safe remedial agents; but it is necessary, at all events, to be aware of their possible effects.













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